DOCUMENT RESUME

ED 421 861 FL 025 361

AUTHOR El-Marzouk, Ghiath
TITLE Avoidance Defined: The Psychology of Linguistic Determinism and the Ontology of Cognitive Predeterminism. CLCS Occasional Paper No. 52.
INSTITUTION Trinity Coll., Dublin (Ireland). Centre for Language and Communication Studies.
ISSN ISSN-0332-3889
PUB DATE 1998-00-00
NOTE 78p.
AVAILABLE FROM The Secretary, Centre for Language and Communication Studies, Trinity College, Dublin 2, Ireland.
PUB TYPE Reports - Research (143)
EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Arabic; *Cognitive Processes; English (Second Language); Foreign Countries; Grammar; *Language Patterns; *Language Processing; Language Research; Language Usage; *Linguistic Theory; *Psycholinguistics; Second Language Learning; Uncommonly Taught Languages; Verbs
IDENTIFIERS *Avoidance Behavior

ABSTRACT

This study investigated whether "avoidance" is an appropriate term to describe the linguistic behavior in which the learner with a particular first-language (L1) background tries to underproduce or underrepresent a particular second-language (L2) structure. The first section seeks to establish the general psycholinguistic principle that determines avoidance in the process of L2 acquisition, particularly within behaviorist and cognitive psychology. The second section looks in more depth at the ontological dimension of cognition that predetermines this general psycholinguistic principle. The final section is an extensive critical survey of an "avoidance classic," namely H. Kleinmann's account of the passive construction in the case of Arabic-speaking learners of English and some of J. Schachter's speculative conclusions. (Contains 51 references.) (MSE)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 421 861

TRINITY COLLEGE DUBLIN

Centre for Language and Communication Studies

Avoidance defined: the psychology of linguistic determinism and the ontology of cognitive predeterminism

Ghiath El-Marzouk

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

D. G. Little

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

FL025361

CLCS Occasional Paper No.52

ISSN 0332 3889

Spring 1998

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

CLCS Occasional Papers

General Editor: D. G. Little

CLCS Occasional Papers report on research carried out within or in association with the Centr for Language and Communication Studies, and on research carried out elsewhere which is c special interest to the Centre's own concerns and activities. In some instances they present th texts of public lectures promoted by the Centre.

The following titles have been published and are available from The Secretary, Centre fo Language and Communication Studies, Trinity College, Dublin 2.

Autumn 1981

1. D. M. Singleton, *Language transfer: a review of some recent research* (31pp.)
2. Jeffrey L. Kallen, *Linguistics and oral tradition: the structural study of the riddle* (33pp.)
3. D. M. Singleton, *Age as a factor in second language acquisition* (70pp.) - OUT OF PRINT

Summer 1982

4. Francis Nolan, *Voice quality and speech synthesis* (30pp.)
5. Roger Bennett, *Language elicitation procedures* (23pp.)

Winter 1982-3

6. S. M. Devitt, D. G. Little, S. P. Ó Conchúir & D. M. Singleton, *Learning Irish with* Anois is Arís (128pp.) - OUT OF PRINT

Autumn 1983

7. William T. Littlewood, *A communicative approach to language-teaching methodology* (19pp.)
8. Rose Maclaran, *On the interaction of semantics and pragmatics* (18pp.)
9. E. M. Harding, *Compensation strategies* (54pp.)

Autumn 1984

10. Jeffrey L. Kallen, *Generative phonology in the clinic* (38pp.)
11. Gearóid O Ciaráin, *The affective dimension in second/foreign language learning: an interactional perspective* (42pp.)

Spring 1985

12. D. M. Singleton & D. G. Little, *Foreign languages at second level: defining a syllabus, with particular reference to the needs of the senior cycle* (19pp.)
13. John Harris, *The polylectal grammar stops here* (12pp.)

Spring 1986

14. D. G. Little & A. J. Grant, *Learning Germa without a teacher. Report on a self-instru tional programme for undergraduate studer of Engineering Science at Trinity College, Du lin, 1982-1984* (60pp.)
15. Máire Owens, *Eithne: a study of second la guage development* (62pp.)
16. D. Wilson & D. Sperber, *Pragmatics: an ov view* (36pp.)

Autumn 1986

17. Ailbhe Ní Chasaide & Eugene Davis, *A dat processing system for quantitative analysis speech production* (28pp.)
18. Seán M. Devitt, *Learning a foreign langua through the media* (69pp.)
19. Meriel Bloor & Thomas Bloor, *Languages f specific purposes: practice and theory* (34p

Spring 1988

20. D. G. Little & D. M. Singleton, *Authentic ma rials and the role of fixed support in langu teaching: towards a manual for language lea ers* (26pp.)

Spring 1989

21. Seán M. Devitt, *Classroom discourse: its ture and its potential for language learn.* (72pp.)
22. V. J. Cook, *The relevance of grammar in applied linguistics of language teaching*(43p

Spring 1990

23. Sera De Vriendt & Pete Van de Craen, *Bi gualism in Belgium: a history and an appra.* (52pp.)
24. David Singleton, *The cross-linguistic facto second language learning: a report on s small-scale studies recently conducted at CLCS* (20pp.)

(continued on inside back cover)

CLCS Occasional Paper No.52
Spring 1998

Avoidance defined: the psychology of linguistic determinism and the ontology of cognitive predeterminism[1]

by

Ghiath El-Marzouk

0 Introduction

This paper raises the question whether *avoidance* is an appropriate term to describe the linguistic behaviour in which the learner with a particular L1 background tries to underproduce or underrepresent a particular L2 structure (Schachter 1974; Kleinmann 1977, 1978). From a psychological standpoint, the term is clearly defined as a genuine phenomenon resulting from the organism's realization that specific forms of input data are avoided (on the levels of concrete representation and/or abstract mentalization) simply because such forms are difficult to restructure or reorganize in the output, and thus an alternative 'strategy' should be employed to fill in the consequential gap. However, the individual's resorting to this alternative 'strategy' does not imply his/her 'ignorance' of the avoided form, as misinterpreted by James (1980).[2] Rather, the individual is said to have some sort of knowledge of the avoided form because it is obvious that one cannot avoid what one does not know, a truism that has repeatedly been emphasized by researchers like Seliger (1989). For this reason, an attempt will be made to identify the sorts of knowledge that may lead to the nonuse of a given L2 structure on either of the two levels: concrete representation and abstract mentalization, or to its use but with erroneous manifestations from an L2 perspective, since recent research has shown that even Schachter's original study provides insufficient insights into the concept of avoidance (cf. Kaminoto *et al.* 1992). Furthermore, Kleinmann's account, particularly of the passive construction in the case of Arabic-speaking learners of English, will be recon-

sidered in the light of this identification and the potential frequency differences in the passive construction between Arabic and English. Some critical remarks on Schachter's speculative conclusions will also be made where appropriate.

The paper, of course, does not claim to offer an alternative methodology for the 'exploration' of avoidance, as the *problem* of defining the phenomenon in linguistic terms still remains, and a *procedure* for identifying the specific sort of knowledge that lies behind it has not yet been established. It may be the case, the case with Schachter's and Kleinmann's data specifically, that the learners' internalized knowledge (be it conscious or subconscious) of the pragmafunctional limitations of a given structure in the L1 may actively dissuade them from producing its counterpart in the L2. But to regard the underproduction or underrepresentation strategy that emerges from this activated dissuasion as evidence of *avoidance* would connote a 'wilful' psychological sensitization of the learners' internalized knowledge of the L1 structure, and would certainly impose upon this knowledge the characteristic of being conscious rather than subconscious. As a consequence, the learners' externalized knowledge of the L2 counterpart can never be looked upon as attaining to 'perfect' receptive cognizance[3] when avoidance trials are in the process of being made, even if Schachter pointed to what she herself considered a fact that there is a direct correlation between the learners' production trials and their relative sureness of the correct reorganization of the L2 counterpart. This seems to be the crucial point that has always been overlooked since the publication of Schachter's original work: 'perfect' receptive cognizance of a given L2 structure in the sense intended here (cf. note 3) is well attainable as part of the input, whilst at the same time reorganization of the morphophonological or morphosyntactic aspects of that structure is avoidable in the output for certain psychological reasons which will be clarified in the upcoming sections.

The study put forward in this paper is, therefore, no more than a provisional endeavour to arrive at a plausible solution to the *problem* of defining the phenomenon of avoidance in L2 acquisition research, and to go towards a serious crystallization of a *procedure* that may be sought for the identification of the specific sort of knowledge underlying this phenomenon. The approach to the analysis of some typical examples is necessarily qualitative, since one naturally talks about

how certain linguistic representations must be if certain assumptions about the mental operations that predetermine them are true. Thus, consideration of the natural consequences leads to a scrutiny into one of the major logical connectives that are familiar in the propositional calculus, viz. conditionals or 'if ... then' statements. Such connectives describe theoretic possibilities and possible worlds which, in turn, appear to provide this kind of description with perceivable substance. But how linguistic representations (or in fact anything) may be, and how they must be, are above all **ontological** matters, matters concerning what there is, that feed real conundrums.

The study falls into three main sections: the first section seeks to establish the general psycholinguistic principle which determines avoidance in the process of L2 acquisition. It will draw heavily on what the term 'avoidance' precisely means within the framework of behaviourist psychology, whose historical-conceptual antecedents can be traced back to the empirico-rationalist psychology of the seventeenth century. A circumscription of the same paradigms (i.e. the paradigms of avoidance delineated by the behaviourists) with a cognitive aura will help to understand the phenomenon from a deeper perspective through their application to the process of learning or acquiring a particular L2 structure. The second section goes even more deeply into the ontological dimension of cognition that predetermines the general psycholinguistic principle discussed in the first section. It will thus be a conceptual extension of the sort of cognitive ordinance that the avoidance of a given L2 structure presupposes. From an epistemological standpoint, the ontology of this ordinance will be explained in terms of Bergson's notion of 'intuitive knowledge' but with some modifications. The third and final section will be an extensive critical survey of an 'avoidance classic', namely, Kleinmann's account of the passive construction in the case of Arabic-speaking learners of English and some of Schachter's speculative conclusions. It should be noted, however, that the choice of the passive construction here is a matter of pure coincidence, and that the conclusions drawn in this critical survey are to be taken as a typical exemplification applicable to any structural device that exists in any two languages instantiating parametric variation in that device.

1 The psychology of linguistic determinism

First and foremost, according to its original paradigms, which were characterized in the behaviourist tradition, *avoidance* should be perceived as a potentially positive principle or subprinciple of learning in general; 'positive' in the sense that the nonoccurrence of what is supposed to occur constitutes an inevitable precondition for successful behaviour (i.e. successful learning), regardless of the natural consequences that would arise from what is supposed to occur. Yet avoidance, in and of itself, appears to be a negative strategy in most of the literature of L2 acquisition research, simply because it involves 'negative' contingencies between certain contexts (communication and/or learning) and 'passive' behaviour towards the production of certain grammatical rules or lexical items. In order to see where the term 'avoidance', within its positive implications, actually came from, and in what technical sense it was used by the behaviourists, some historical-conceptual account of the related issues will be outlined.

The general principle of **learning** entails one, or more, of the biological processes which construct an unknown array of internal 'mediators' that are both necessary and crucial for the survival of the human species. Experimental approaches to this process and its subprocesses draw essentially on scientific research into the evolution of intelligence, comparative cognition, functional neurology, and animal models of human behaviour. However, despite the fact that studies into these brands of knowledge gained considerable momentum, a universally acknowledged definition of learning as a general process does not seem to exist. The only thing that biologists, neurophysiologists, psychologists, etc. can say about this process is to identify it in terms of enduring **changes** in the mechanisms of behaviour, since changes in the behaviour itself do not, and will not, reflect learning. It is these former changes that would include those which can be classified as **environmental changes**, whose adverse effects should, and must, be minimized by means of behavioural adjustments as in the case of learning how to *avoid* danger, fear, and all other similar instances that are considered the necessary 'evils' of life. As such, environmental changes do reflect learning simply because behavioural adjustments require the acquisition of new motor behaviour, or behaviours, as well as the acquisition of new anticipatory reactions (that is, the ability to predict important events in the environment – be they desirable or undesirable).

This, of course, is not to say that **developmental changes** in the human body (i.e. physical or organic changes) play no significant role in the effectiveness of learning. Such changes do in fact affect learning and, in particular cases, learning will not commence (let alone 'proceed') without them. For instance, no amount of toilet training, even if the best available methods are used, will prove to be effective in a child until the muscles, those 'bundles' of elastic substance that are responsible for bladder and rectum control, have developed enough, so that the child will learn how to *avoid* what ought to be avoided. Now, before embarking upon a much more technical exposition, let us first underline the obvious fact that *the individual learns how to avoid things without instruction*, whether the behavioural adjustments that result in avoidance are caused by the adverse effects of environmental changes or by the adverse effects of developmental changes.

Theoretical approaches to the study of learning as a general process date back to seventeenth-century philosophy, particularly to the philosophy of Descartes (1596–1650), whose speculations on the polarity of mind and matter (i.e. his version of dualism) in turn had their roots in the philosophy of Ibn Sina (980–1037), or Avicenna as so known to the West (see, for example, Uraibi 1991, pp.25f.). Such roots can be seen in the absence of any principled difference in the way either philosopher introduced a rationalist theory of what is 'mental' and what is 'material', a seemingly undeniable conceptual fact whose historicalness was emphasized by the Italian 'orientalist' Forlani in his 'Avicenna: Il cogito, ergo sum de cartesio' in the early part of this century (cf. Forlani 1927). Like Avicenna, Descartes believed that the mind (or the 'rational' spirit in the former's terminology) did not exist as an entity that was both nonindividuated from and prioritized to the existence of the body, but rather the 'prestate' of the mind was engendered side by side with the 'poststate' of the body, even though either entity had its own independent location in nature. In this sense, individuation and nonprioritization would stress two dual levels of mind and body, the latter being qualitatively different from the former: on the one hand, an ontological parallelism of the mind and the way it rationalizes itself; and on the other, a *lower* level of ontological parallelism of the body and the way it corporealizes itself. That is, on either level of parallelism there is a dependency relation between **entity** and **existence** respectively, a thesis that is still held, it seems, in contemporary philosophy, as will be seen in the next section.

Returning to the main theme of this section (that is, rationalist psychology), the Cartesian version of dualism divided human behaviour into two classes: **involuntary actions** (or reflexes), which normally proceed in immediate, and often nonrationalized, response to external stimuli; and **voluntary actions**, which do not have to be triggered by external stimulation, but occur as a reflection (not necessarily immediate) of the individual's conscious, rather than subconscious, choice to act in a specific manner. A moment of consideration will indicate that the latter class (voluntary behaviour) is constantly controlled, whether desirably or undesirably, by what is collectively referred to as the human mind, a 'nonphysical' or 'immaterial' entity regulating certain aspects of the 'physical' or 'material' world. If this is indeed the case, then how can such a nonphysical entity generate the physical movements that are necessarily involved in voluntary behaviour? Descartes' initial assumption was that the mind, or as a preliminary the mental, had an inherent connection with the brain (i.e. the physical or the material) by way of the pineal gland, a highly complex organ whose exact function or functions are yet to be explored in the brain sciences. Because of this inherent connection between the mind and the brain, the mind could well be aware of the reflex mechanisms that operate within involuntary behaviour, whilst at the same time it could 'initiate' voluntary behaviour for the same reason. As a consequence, the 'initiation' of voluntary behaviour in the mind suggests that this behaviour could well occur independently of external stimuli (cf. Domjan and Burkhand 1993, p.3).

It follows from the above that from the Cartesian version of dualism there arose two central issues concerning the human mind as a nonphysical entity generating the physical movements that are necessarily involved in voluntary behaviour: first, the contents of the mind; and second, the workings of the mind. Since their initial formulation within a rationalist framework, these two issues have been, and still are, the subject of acrimonious debates among linguists, philosophers, and psychologists alike; namely, the so-called nativists and the so-called empiricists.

With regard to **the contents of the mind,** Descartes, on the basis of Avicenna's notions of 'primary intelligibles' and 'secondary intelligibles'[4], attributed some of these contents directly to sense experience, and others to certain ideas or 'predispositions' that are both innate and independent of worldly experience; the latter being the

principal theme of what is known as innatism or nativism. Against this background Locke (1632–1704) began his inquiry into the sources of the contents of the mind (or 'the materials of knowledge' in his words). He maintained that all ideas and beliefs were acquired directly or indirectly through experience after birth. Locke's conclusion firmly places him as an advocate of empiricism among others such as Berkeley (1685–1753) and Hume (1711–1776), who used the term 'perceptions' to refer to these contents. In Locke' words: "I answer, in one word, from *Experience*: in that, all our knowledge is founded; and from that it ultimately derives itself" (quoted in Woolhouse 1988, p.76). According to this intellectual tradition, the mind was considered to come into being as a blank slate (or *tabula rasa*), with no notions of 'Self', 'Number', 'God', or any sort of intelligibles.

Concerning **the workings of the mind**, a much more intricate issue, it appears, Descartes believed that the mind did not, and would not, operate in a predictable and systematic manner in accordance with rules or laws that were discoverable in the natural sciences. On the other hand, Hobbes (1588–1679), who denied neither the Cartesian version of dualism nor its particular stress on the mind's constant control over voluntary behaviour referred to above, contended that the mind functioned as predictably and lawfully as the reflex mechanisms operating within involuntary behaviour. This contention appears to derive directly from Hobbes's conception of the *a priori* principle of causation (as being essentially matter in motion), whereby the mind acquires knowledge in general. In his *Objections* to Descartes' *Meditations* (1641), Hobbes stated that the 'mental' was in principle no different from the 'material', and was, in his words, "nothing but the motions in certain parts of an organic body" (quoted in Woolhouse, 1988, p.39). On this 'materialistic' notion of how the mind works, sense-perception, too, is nothing but a matter of motion that occurs inside the body of the perceiver. Yet this does not imply that the mind does not go beyond the *a priori* principle of causation by means of which knowledge of effects is attained from knowledge of generative causes, or knowledge of causes is attained from knowledge of generated effects. Knowledge, for Hobbes, must also be a by-product of reason or, in his terms, 'ratiocination', by which he means 'computation', notwithstanding the basicness of sense-perception, that is, 'ratiocination' begins with causation (*De Corpore* [Chapter I, p.2]).[5]

Given the basicness of causation, which is essentially matter in motion as mentioned above, it seems that motion is the one basic (i.e. universal) cause that can explain universal phenomena. In fact, this 'materialistic' principle dominated almost every aspect of Hobbes's thinking; it even injected its influence into his moral philosophy where feelings such as desire, aversion, love, etc. were considered the '**motions of the mind**', whose causes should be studied in the natural sciences. One figure who gave a particular impetus to this injunction was the English doctor and anatomist William Harvey (1578–1657), whom Hobbes put on a level with Galileo (1564–1642). From Harvey's *De Motu Cordis et Sanguinis* Hobbes realized that the principal motion inside the body was that of the blood circulated by the heart, an organ that was regarded as 'the original of life' and 'the fountain of sense', whose vital motion ultimately governs perception, thinking, and all the sorts of feelings just mentioned. Those motions that occur outside the body (or by analogy the **environmental changes** referred to earlier) either facilitate or inhibit the potential for this vital motion which, in turn, activates the **developmental changes** referred to earlier. As a consequence, the individual's 'natural' awareness of these changes would constitute either a feeling of *pleasure* or a feeling of *pain*. Given that both types of changes affect learning as a general process, what the individual has to do is develop 'naturally' the relevant affective attitudes towards this sense-polarization, that is, a basic love for pleasure and a basic aversion to pain.

It now becomes clear that, so far as the workings of the mind are concerned, the main difference between the Cartesian and the Hobbesian approach is that in the former the mind's control over voluntary behaviour is constant, though it is difficult to draw an analogy between the inherent principles of this control and the rules or laws that can be discovered in the natural sciences, whereas in the latter (the Hobbesian approach) the mind's constant control over voluntary behaviour is reducible to the heart's vital motion, which ultimately determines developmental changes and is largely determined by environmental changes. The crucial point here is Hobbes's identification of this constant control in terms of the general principle 'pursuit of pleasure and *avoidance* of pain', a seemingly unavoidable and undeniable principle that was recognized as one variant of a more general principle called **hedonism** (see, for example, Domjan and Burkhard 1993, pp.4f.).[6] As a mere fact of life, this principle is still

applicable in order to normalize instantaneously the way the mind 'initiates' voluntary behaviour, leaving behind the reverse direction (i.e. *avoidance* of pleasure and pursuit of pain) to an abnormal condition as a real or an apparent exception to Freud's (1856–1939) 'pleasure-principle', namely, the passive reversal of behaviour associated with **masochism.**

Recall for the moment that the learner avoids a particular L2 structure because he/she finds it difficult (i.e. painful) to restructure or reorganize in the output (i.e. to process). Had the learner attempted to utilize consciously and contumaciously an L2 structure known to be difficult/painful to process at a certain stage of learning, he/she would have behaved in a linguistically masochistic way at that stage of learning.

As discussed above, Hobbes, in his argument against Descartes' *Meditations*, emphasized the deterministic–materialistic character of the principle that generally governs the way the mind operates (see also note 5). This deterministic–materialistic principle as well as Darwin's (1809–1882) preliminary endeavours to study reflex mechanisms within a general theory of evolution seems to have been a historical-conceptual prototype, among others, that gave incentive to the scientific programmes undertaken by the Russian physiologist Pavlov (1849–1936), whose principle of **nervism** (that is, all key physiological functions are determined by the potentials of the nervous system) dominated his research on functional neurology in the same way the principle of 'matter in motion' dominated Hobbes's thinking. Pavlov's overindulgence in the causality of 'conditioned reflexes', which are by definition simple units of acquired behaviour and thus an application of stimulus-response associations, situated him as the founder of behaviourism, a special version of materialism.[7] Essentially, studies into 'conditioned reflexes' relied on an indirect application of the general laws of 'classical conditioning' to which investigations of 'avoidance conditioning' were closely allied. The first known experiments that directly addressed 'avoidance conditioning' were conducted by the Russian neuropsychologist Bechterev (1913) as an empirical continuation of Pavlov's research on functional neurology and the principle of nervism just mentioned (cf. Domjan and Burkhard 1993, p.262).

From a behaviouristic perspective, avoidance conditioning was associated with the circumvention of **aversive stimulation**, in the sense that the individual ought to make a specific response (an in-

strumental response) to prevent or delay the occurrence of an aversive stimulus. Apart from its apparently technical definition, the basic notion of avoidance conditioning does not in fact deviate from the basic notions of some historical antecedents referred to in this study; namely, Epicurus's principle of hedonism (see note 6), Hobbes's reiteration of essentially the same principle, and Freud's pleasure principle, except that the difference may have to do with the *sort* of goal towards pleasure or pain, as will be discussed in the next section. This is clear evidence that the behaviourists introduced the term 'avoidance conditioning' to describe a fact of life that had been familiar in the history of human thought for at least two and a half millennia. Such a fact, which generally entails the individual's basic aversion to, and therefore his/her avoidance of, pain, fear, and all the necessary 'evils' of life mentioned earlier, is simply a **natural** trait in that no one would think that it would be easy to imagine a world in which avoidance responses were not inevitable. Given the assent to or acceptance of the truth of this fact (the truth of its existence at least), avoidance responses can be made in any learning situation such as L1 acquisition and L2 acquisition, since they can be made during learning as a general process.

Confusion over the question of the use of the appropriate terminology to describe this fact seems to be sufficiently pertinacious for us to adumbrate here some clarificatory points. Those who are convinced by Chomsky's (1959) criticism of Skinner's (1957) *Verbal Behaviour* should not feel disinclined to use terms like 'aversive stimulus', 'instrumental response', etc. when a phenomenon like avoidance is the issue at hand. To be sure, this phenomenon does not enact a direct strategy of learning whereby it could be argued that the individual (the L1 acquirer) would learn a given rule or item on the basis of 'reinforcing' exposure to the relevant data.[8] Rather, avoidance constitutes a potential property (principle or subprinciple) of the mind, and thus a deeper scrutiny into the inner mechanism or mechanisms that lead(s) to its occurrence in language acquisition would contribute to what Chomsky seeks to discover, "a *mental* reality underlying actual behaviour" (Chomsky 1965, p.4; emphasis added). Yet even Chomsky would be inclined to construe terms like 'aversive stimulus', 'instrumental response', etc. as 'metaphoric extensions' of those that are employed in experimental psychology due to "the poverty of the terminological apparatus available for paraphrase of the tradi-

tional mentalistic notions" (Chomsky 1965, p.204). Therefore, the use of these well-established terms in both their 'literal' and their 'metaphoric' meanings can be legitimized for the dual construal of the behaviouristic and cognitive connotations of the avoidance phenomenon respectively. If the individual constantly attempts to avoid producing a natural response to an aversive stimulus, and if such attempts are successful in normal conditions (except for those 'unsuccessful' attempts which result from limited management of time and space), then it must be the individual's conscious awareness (i.e. his/her mind) which ultimately seeks this success in these conditions. Given the mentalistic dimension of avoidance behaviour as such, I can see no harm in employing technical terms that were originally coined by the behaviourists so long as the purpose is to arrive at this dimension and to illustrate how its inner mechanism or mechanisms operate(s) in the process of L2 acquisition.

Generally speaking, **avoidance behaviour** necessitates a 'negative' contingency between an aversive stimulus and an instrumental response. The aversive stimulus is necessarily undesirable because aversive stimulation is simply a fact of life, whereas the instrumental response is necessarily contributory in the sense that it involves one and only one appropriate subunit of behaviour to be performed as a substitute for the **natural response** (or the avoided response) on the one hand, and in response to that aversive stimulus on the other (e.g. in order not to fall, slip, etc. the individual makes the appropriate avoidance response). As such, this behaviour requires that a specific action be taken to *prevent* or *delay* the occurrence of the aversive stimulus, for which reason it is sometimes referred to as **active avoidance**.[9] Moreover, for exactly the same reason, avoidance conditioning is also considered one form of **negative reinforcement** where the appropriate subunit of behaviour (i.e. the instrumental response or the target behaviour) is strengthened by direct or indirect elimination of the aversive stimulus. It is, therefore, the aversive stimulus (also called 'aversive activity' or 'aversive event') that is the immediate trigger for the target behaviour, since it constitutes a stimulus that functions as a 'negative reinforcer' when it is eliminated, and as a 'punisher' when it is presented (see also note 9). On the face of it, this indicates that, for the occurrence of every unit of avoidance behaviour, at least three major entities (or subunits of behaviour) should coexist in one form or another in its conditioning. These entities are: the aversive

stimulus, the instrumental response, and the negative reinforcer. The relation between the aversive stimulus and the instrumental response is causal, and their association would formulate a 'stimulus-response reflex', since the former entity represents a 'cause' and the latter its 'effects'. The negative reinforcer is determined by the circumstances under which the aversive stimulus occurs, that is, how the aversive stimulus functions as a negative reinforcer when it is removed and as a punisher when it is not. What is more, there is still a further major entity which is *always* absent from the unit of avoidance behaviour; namely, the **natural response** (or the avoided response) for which the instrumental response is a substitute. It is not surprising, therefore, that, because of this absence, behaviourists and behaviour analysts alike exclude investigation of the natural response entirely from their analysis of avoidance conditioning. However, when it comes to learning situations such as L2 acquisition, investigation of the natural response is crucial for the identification of the level (or sublevel) of cognition the learner attains of this entity, and thus its nonoccurrence can only be taken as *temporary*, for the potentially **ontological** dimension that characterizes it, as will be seen in the next section.

Given the three major entities that underlie the occurrence of a particular unit of avoidance behaviour, it seems that the **instrumental response** is the entity which receives more attention than the other two due to the highly empirical nature of behaviourist psychology. Thus, behaviour analysts often make a distinction between two inherent 'phases' of avoidance conditioning in terms of the expected consequences that depend on the 'nonoccurence' and the 'occurrence' of the instrumental response. While 'nonoccurence' is identified with the expected consequences of a 'temporary failure' to engage in the instrumental response, 'occurrence' appears to constitute a number of further 'phases' or 'subphases' within the intensity of this action, ranging from the *mere* occurrence, to the *strengthened* occurrence or, even, to the *more strengthened* occurrence of the instrumental response. To be more precise, the failure to engage in the instrumental response starts from a (0) level of production (or *nonproduction*), to (-X) level of production (or *underproduction*), to (+X) level of production (or simply *production*), to (X^n) level of production (or *overproduction*). Thus, the expected consequence of (0) level will strengthen the initiative to engage in (-X) level whose expected consequence, in turn, will strengthen the initiative to engage in the following level, and so forth.

This seems to be the causality basis or mechanism underlying the relation between one level of instrumental-response production and another. Whether or not this basis was directly intended by behaviour analysts is not to be raised in the present study; nevertheless, their identification of avoidance conditioning in terms of three essential properties seems to indirectly reflect this basis. Hence, so far as the instrumental response is concerned, identification of avoidance conditioning by behaviour analysts as such is adumbrated as follows (see, for example, Grant and Evans 1994, p.134):

(1) a. An expected consequence depends on the *failure* to make an instrumental response within a specified period of time,

b. The instrumental response occurs more often or is otherwise strengthened, and

c. The increase in the strengthening of the instrumental response results from its expected consequence relation, not some other factor.

With reference to these three essential properties, behaviour analysts cite numerous examples of avoidance conditioning which undoubtedly occur in everyday social or political practice. The common denominator in all such examples is that the aversive-stimulus change depends on the failure to produce the instrumental response (i.e. the 'nonoccurrence' of the appropriate subunit of behaviour or the target behaviour as seen above) within a particular time limitation. This, of course, is not to say that failure, in and of itself, will be 'accomplished' to act as an immediate trigger for the unit of avoidance behaviour as the 'nonoccurence' of the instrumental response will not cause the aversive-stimulus change, but rather the **expected consequences** of this failure dependency will be the immediate precondition that counts. To make the point clear, two instances will suffice here:

(2) a. The individual's failure to wear warm clothes before going outside in freezing weather may lead him/her to freeze to death (cf. property (1a)).

b. The expected consequences of this dependency strengthen the action of 'wearing warm clothes' (cf. properly (1b)), and increase the strength of this action whenever signs of 'freezing weather' are

expected (cf. property (1c)).

c. Behaviour analysts, then, say that the individual *avoids* the pain that would result from freezing weather by wearing warm clothes.

(3) a. The failure of the leaders of the so-called super powers to negotiate with one another during the cold war may result in hot war (cf. property (1a)).

b. The expected consequences of this dependency, people hope, will strengthen the action of 'negotiating' (cf. property (1b)), and will increase the strength of this action whenever signs of cold war are expected (cf. property (1c)).

c. Behaviour analysts, then, say that leaders *avoid* engagement in hot war through timely negotiation.

From these two examples, it can be seen how *explicity positive* the implications of avoidance conditioning are, a fact that has been strongly emphasized at the outset of this section, even if this conditioning necessitates a 'negative' contingency between the **aversive stimulus** (e.g. 'freezing weather' in (2) or 'the cold war' in (3)) and the **instrumental response** (e.g. 'wearing warm clothes' in (2) or 'negotiation' in (3)). The contingency is called 'negative' simply because the aversive stimulus, when eliminated by the instrumental response, functions as a **negative reinforcer**. In this respect, one can perceive the significance of the three major entities (the aversive stimulus, the instrumental response, and the negative reinforcer) that are required for a given unit of avoidance behaviour. Given the active nature of avoidance conditioning (cf. note 9), elimination in this case, the case of most of the instances that occur in everyday social or political practice such as (2) and (3), can only be taken as *prevention* of the aversive stimulus rather than its *delay*. This is due to the fact that these instances do not reflect learning in the ultimate identification of the term 'learning' since they do not involve enduring **changes** in the mechanisms of behaviour, but rather nonenduring changes in the behaviour itself. To be sure, the term 'delay' implies that the aversive stimulus will be overcome sometime in the future without recourse to the instrumental response, a fact that will certainly indicate one of the enduring **changes** in the mechanisms of behaviour which learn-

ing as a general process is identified with. In learning situations such as L2 acquisition, this means that the aversive stimulus, when overcome as such, will no longer be an aversive stimulus, and thus the entire unit of avoidance behaviour will no longer be performed, a seemingly *potentially positive* implication of avoidance conditioning, as will be seen soon.

In everyday situations such as (2) and (3), on the other hand, it would be extremely difficult, if not impossible, to think of an instance where elimination of the aversive stimulus can be viewed as its *delay*, even though some behaviour analysts insist that there are some (see, for example, Grant and Evans 1994, pp.135f.). This is because aversive stimulation, being a mere fact of life, cannot be overcome without recourse to the instrumental response in these situations. For instance, in situation (2) one cannot be too strong for freezing weather while going outside with no warm clothes; in situation (3) the leaders of the so-called super powers cannot put an end to the cold war without serious negotiation. Thus, elimination of aversive stimuli in everyday situations should constantly be perceived as their prevention (provided that the attempts to prevent them may not be successful), since aversive stimuli in such situations are *always* aversive stimuli, whether the individual successfully attempts to prevent them or not. Nevertheless, when behaviourists generally associate avoidance conditioning with the individual's initiations of an instrumental response to *prevent* or *delay* the occurrence of an aversive stimulus, they seem to inherently hint at a distinction between *permanent* attempts to prevent and *temporary* attempts to delay aversive stimulation respectively. But, in the case of enduring changes in the mechanisms of behaviour, it is the individual's temporary attempts to delay aversive stimulation which require serious investigation in learning situations such as L2 acquisition where English is the L2. Having explained what each of the relevant terms precisely means within the framework of behaviourist psychology, it would be useful at this point to identity the equivalent import for each of these terms in reference to the linguistic and pragmafunctional requirements of a given L2 structure. Thus, the three major entities that underlie the occurrence of a given unit of avoidance behaviour (the aversive stimulus, the instrumental response, and the negative reinforcer) as well as the entity that is absent from this unit (the natural response or the avoided response) are schematically recharacterized as follows:

(4) a. **The aversive stimulus** is the aversive context or contexts which preconditionally require(s) the production of an L2 structure *known* to be difficult/painful to process within the linguistic and nonlinguistic limitations of that context or contexts.[10] This L2 structure (call it the aversive structure) could be either a lexical item or a grammatical rule.[11]

b. **The natural response** (or the avoided response) is the avoided L2 structure; 'natural' in the sense that the attempt to process it will 'naturally' satisfy the context or contexts which preconditionally require(s) its production, and 'avoided' because it constitutes the aversive structure identified in (4a).

c. **The instrumental response** (or the target response) is the appropriate and necessarily contributory L2 structure that is produced as a substitute for the avoided L2 structure identified in (4b).

d. **The negative reinforcer** is the aversive context or contexts when eliminated by the production of the appropriate and necessarily contributory L2 structure identified in (4c).

From the above discussion of the outstanding features of avoidance conditioning, it can be seen that this conditioning constitutes one type of instrumental aversive control where the struggle for 'freedom' from situations that are *expected* to be difficult/painful is consciously and voluntarily sought. Thus, unlike punishment conditioning (see note 9), avoidance conditioning tends to increase the occurrence of target bearing, that is, the performance of instrumental behaviour (cf. (4c)). Given the truism underlined at the outset of this section (a truism which states that the individual learns how to avoid things without instruction), it follows that, by means of avoidance conditioning, the individual, too, learns how to minimize expected contact with aversive stimulation. This behavioural alteration is simply a fact of life that affects all sorts of human behaviour, including learning situations such as L2 acquisition where the avoidance phenomenon is nothing but a potential property (principle or subprinciple) of the mind which brings about enduring changes in the mechanisms of **linguistic** behaviour. An indication of one such mechanism is the performance of instrumental linguistic behaviour (cf. (4c)), which is to be viewed as a *pro tempore* compensational behaviour in the sense that it helps the learner steer clear of a negative contingency between

what he/she *ought to do* and the aversive situation expectedly created by the avoided L2 structure (cf. (4b)). In the light of the three essential properties of avoidance conditioning adumbrated in (1), this aversive situation would also be consciously realized through the expected consequences of an 'unaccomplished' failure to engage in the instrumental linguistic behaviour (cf. (4c)), and thus the extent of such aversiveness would be *more* consciously realized if such linguistic behaviour was not performed (as if an 'it-is-better-than-nothing' thought was extemporaneously entertained, where 'it' refers to the instrumental response (4c) and 'nothing' refers to the linguistic gap that would result from the nonproduction of the natural response (4b)). Yet even production of the instrumental response as such would, in and of itself, mirror a form of necessarily 'passive' linguistic behaviour in the sense that the learner is 'forced' not to initiate the production of the natural response due to his/her *far more* conscious realization of the expected linguistic difficulty/pain that would emerge from the attempt to initiate.

Having identified an L2 structure with either a lexical item or a grammatical rule (cf. (4a)), the expected emergence of this difficulty/pain can be recognized on at least two generalized linguistic levels. Firstly, the **morphophonological** level of lexical items where the expected consequences of the difficulty/pain that would be experienced lead to the avoidance of a particular lexical item and the subsequent resort to a semantically identical one (i.e. its synonym), simply because the morphophonological properties of the latter are 'felt' to be less difficult/painful to process within a specified time limit as in (5) below.[12] Below this level there may emerge two further sublevels in a concomitant interface where one, or both, of these sublevels interact(s) with the source of morphophonological difficulty/pain: (i) the *lexical* properties of a given substantive which necessitate a comparatively complex measure of syntactic representation (as in the case of *capable* vs. *able* in (5a-b) below); and (ii) the *semantic* properties of a given substantive whose denotative meaning (i.e. its referent) refers to a taboo object or concept (e.g. *'It's a pain in the neck'*, hence the word that stands for *neck* is avoided for ethical reasons).

Secondly, the **morphosyntactic** level of grammatical rules where the expected consequences of the difficulty/pain which would be experienced lead to the avoidance of a particular grammatical rule and the subsequent resort to a pragmafunctionally identical one (from

the learner's point of view), simply because the morphosyntactic properties of the latter are 'felt' to be less difficult/painful to process within a specified time limit as in (6) below. As the term 'morphosyntactic' indicates, this level also presupposes two inherent sublevels of linguistic representation: (i) the *morphological* properties of the functional categories that are instantiated by the grammatical rule in question; and (ii) the *syntactic* properties of the structural device which incorporates this rule, as will soon become clear. Notice that the following instances are merely typical exemplifications cited here for illustrative reasons.[13]

(5) a. The learner's 'failure' to produce lexical items such as *articulate* (V), *equilibrium* (N), and *capable* (A) within their semantic context or contexts will result in an undesirable lexical gap (cf. property (1a)).

b. The expected consequences of these dependencies reinforce the production of semantically identical lexical items such as *say* (V), *balance* (N), and *able* (A) respectively (cf. property (1b)), and maximize the reinforcement of this production whenever the semantic context or contexts is (are) expected to require the use of lexial items as in (5a) (cf. property (1c)).

c. Therefore, the learner is said to *avoid* the production of lexical items such as those in (5a) by resorting to the production of their synonyms as in (5b).

(6) a. The learner's 'failure' to use a grammatical rule such as the *if*-clause to talk about an **unreal** event (e.g. *If Ghiath was employed his problems would be solved*) within its pragmafunctional context will result in an undesirable syntactic gap (cf. property (1a)).

b. The expected consequences of this dependency reinforce the use of a rule that is pragmafunctionally identical (e.g. *Ghiath's employment would solve his problems*) from the learner's point of view (cf. property (1b)), and maximize the reinforcement of this use whenever the pragmafunctional context or contexts is (are) expected to require the use of a grammatical

rule as in (6a) (cf. property (1c)).

c. Therefore, the learner is said to *avoid* the use of a grammatical rule as in (6a) by resorting to the use of its pragmafunctional equivalent from his/her point of view as in (6b).

Let us now focus attention upon the **linguistic aspects** of the above examples to arrive at the general psycholinguistic principle which determines the avoidance phenomenon in the process of L2 acquisition. At this point, such an inductive analysis will be taken as a preliminary to a more detailed analysis of the **cognitive aspects** of these examples in the next section.

As the examples in (5) illustrate, the source of the morphophonological difficulty/pain that the learner expects to experience with the 'avoided' lexical items can be ascribed to the fact that the lexical items in (5a) require a higher processing level of syllabification and other aspects of phonetic representation than the lexical items in (5b): *articulate* (containing four syllables) vs. *say* (monosyllabic); *equilibrium* (containing five syllables and the alveolar coarticulation of /l/ and /r/ in medial position) vs. *balance* (containing two syllables and lacking this coarticulation); and *capable* (containing three syllables and the aspirational voicelessness – nonaspirational voicedness contrast between /p/ and /b/ respectively) vs. *able* (containing two syllables and lacking this contrast). Furthermore, with regard to the last contrast '*capable* vs. *able*', a lexical category such as *capable* also involves a more complex processing level of syntactic representation (when incorporated into the relevant grammatical rule) than its semantic equivalent *able* does. This can be attributed to the potential lexical properties of either lexical category upon its occurrence in predicative position.[14]

So far as the examples in (6) are concerned, the morphosyntactic difficulty/pain that the learner expects to proceed from a grammatical rule such as the 'unreal' conditional in (6a) is, again, ascribable to the more complex processing level of structural representation which this rule necessitates as compared with its instrumental counterpart in (6b). To mention a few examples, the former rule in (6a) incorporates a comparatively large number of lexical categories (two Ns and two Vs), and therefore of functional categories (Aux, Infl, Det, etc.), the subordination principle that the 'unreal' conditional construction

applies, and so forth. Whereas the latter rule in (6b) only instantiates 'subjectivization-objectivization', a binary syntactic process which subjectivizes the derived nominal *employment* to be directly responsible for the action of *solving* and objectivizes the nonderived genitivized nominal *his problems*.

In the normal course of events (where the processing levels and sublevels of morphophonology and morphosyntax establish the major sources of difficulty/pain), conscious performance of instrumental responses such as those cited in (5b) and (6b) seems to operate either within the boundaries of the semantic field of a particular lexical category as in (5a) or within the boundaries of an instrumentally operationalized pragmafunctional field which is semantically related to the pragmafunctional field of a particular grammatical rule as in (6a). This leads us to underpin at this stage the general psycholinguistic principle that governs the avoidance phenomenon in L2 acquisition in the following way:

(7) a. To avoid an L2 structure expectedly known to be difficult/painful to process at a certain stage of learning is actually to avoid the form of the natural response identified in (4b).

b. In the case of lexical items, the meaning of the natural response is retained through the representation of a lexically different form to satisfy the production of the instrumental response identified in (4c).

c. In the case of grammatical rules, a meaning related to the meaning of the natural response is extemporaneously manoeuvred for and conveyed through the representation of a syntactically different form to satisfy the production of the instrumental response identified in (4c).

As discussed above, the conscious and voluntary struggle for 'freedom' from difficult/painful expectancies is one of the most significant characteristics of avoidance conditioning, and in learning situations such as L2 acquisition the learner is to be seen as an active agent, or rather an *active avoider* (see note 9), who has nothing but special yearning for 'linguistic freedom' until the expectancies being talked about are no longer difficult/painful in his/her focus of attention. The wilful elimination of the negative contingency between what the

learner ought to do and such expectancies (i.e. *pro tempore* compensation) is nothing but a clear indication of his/her yearning for this 'linguistic freedom', and therefore of the potentially positive implication of avoidance conditioning. In this respect, one must be extremely cautious not to confuse avoidance phenomena with the escape phenomena that may precede but may not follow them, even though both are types of instrumental aversive control (or negative reinforcement). Thus, like avoidance conditioning, which entails the three essential properties adumbrated in (1), escape conditioning, too, has the following three defining properties (cf. Grant and Evans 1994, p.132):

(8) a. The aversive stimulus is eliminated, dependent on the performance of an instrumental response.

b. The instrumental response occurs more often or is otherwise strengthened, and

c. The increase in the strengthening of the instrumental response results from its consequence relation, not some other factor.

The abstruse nature of the differentiation between avoidance conditioning and escape conditioning lies in the considerable parallelism of their **inner mechanisms**, particularly when they proceed in everyday sociopolitical practice (not to mention learning situations such as L2 acquisition). Both types of conditioning are instrumentally operationalized as behaviour-change techniques to reinforce, and subsequently increase the strengthened possibility of, the occurrence of the instrumental response (or the target behaviour), since they ultimately seek to establish the aversive-stimulation change within the optimal capacity of the individual by the elimination of the aversive stimulus itself (cf. (1b–c) and (8b–c) respectively). As such, both avoidance conditioning and escape conditioning are radically differentiated from punishment conditioning, a further behaviour-change technique that is also instrumentally operationalized, but to debilitate, and subsequently decrease the weakened possibility of, the occurrence of the instrumental response (see also note 9). These fundamental congruences between avoidance conditioning and escape conditioning appear to constitute a sufficient proviso for behaviourists and behaviour analysts alike to classify them as two procedures of

instrumental aversive control whereby the individual, who undoubtedly has limited freedom in every aspect of his/her behaviour, attempts to struggle (either 'physically' or 'mentally' in the rationalist sense of the terms as seen earlier) for the intended freedom or freedoms that is (are) aspired to transcend such limitations. The individual's attempts in this perspective would characterize themselves as premeditated avenues for the survival of the species, avenues that are 'historically inevitable', simply because 'freedom' as a concept has its biological roots in even the most 'primitive' (if it is permitted to use the word 'primitive' here) behaviour or behaviours which reflects or reflect avoidance and escape phenomena (see, for example, Richelle 1993, p.204).

However, confusion over the question of differentiation between avoidance conditioning and escape conditioning can be traced to the identification of many instances of everyday sociopolitical practice (by even some behaviour analysts) with the former technique, whereas in reality they are much more pertinent to the latter or some other behaviour-change technique. Perhaps this 'empirical' confusion may have been the fundamental reason that researchers like Schachter, Kleinmann, and others entirely misunderstood the concept of avoidance when dealing with learning situations such as L2 acquisition, as will be seen in the extensive critique of some of the existing work in section 3 (see also note 2). It should be noted that, in the behaviourist tradition, the crucial distinction between avoidance conditioning and escape conditioning was beyond question made clear on theoretical grounds but it is the considerable proportion of experimental research that seems to have missed the point. This crucial distinction can be detected, albeit not easily, through close investigation of the **outer mechanism** which the first essential property of either technique presupposes (cf. (1a) and (8a) respectively). With regard to escape conditioning, the premiss that aversive-stimulus elimination depends on the performance of an instrumental response (cf. (8a)) would certainly imply that the aversive stimulus has actually occurred (for whatever reason) some time before the individual's entertainment of the thought of performing the instrumental response in question. Concerning avoidance conditioning, on the other hand, the premiss that the expected consequences of the aversive stimulus depend on the 'failure' to preform an instrumental response (cf. (1a)) would connote that the aversive stimulus has not yet occurred, but rather it is

simply expected, and thus the performance of the specific instrumental response will avert its occurrence.

This sharp contrast between the two techniques will later have its paramount significance for the evaluation of the work of those researchers who 'confidently' claimed to have 'explored' avoidance phenomena in L2 acquisition (cf. section 3). But first let us put forward the more technical exposition to clarify the point: escape conditioning, the simplest instance of negative reinforcement, dictates that the aversive stimulus is continuously in attendance but can be *terminated* by the instrumental response; whereas in the case of avoidance conditioning the aversive stimulus is 'scheduled' to occur sometime in the future, and is thus *prevented* or *delayed* by the instrumental response as mentioned earlier (for further discussion see Domjan and Burkhard 1993, pp.137f.). More explicitly, the individual is said to escape from aversive circumstances which are already present,[15] but to avoid *potential* aversive circumstances that have not yet been present. In everyday sociopolitical practice, examples such as (2a–c) and (3a–c) have already been identified as indications of the first form of avoidance conditioning; namely, *prevention* of the occurrence of the aversive stimulus. If, however, these examples were to be viewed as a reflection of escape conditioning, then the indispensable condition of this conditioning (i.e. the continuous presence of the aversive stimulus) would have to be met, and thus the statements of examples such as (2a–c) and (3a–c) would be something like (9a–c) and (10a–c) respectively.

(9) a. The pain resulting from freezing weather is *escaped* through wearing warm clothes (cf. property (8a)).

b. The action of 'wearing warm clothes' is strengthened by the termination of the pain resulting from 'freezing weather' (cf. property (8b)).

c. The experienced consequences of this termination increase the strength of this action (cf. property (8c)).

(10) a. The hot war resulting from the cold war is *escaped* through the leaders' negotiation (cf property (8a)).

b. The action of 'negotiating' is strengthened by the termination of

the hot war resulting from 'the cold war' (cf. property (8b)).

c. The experienced consequences of this termination increase the strength of this action (cf. property (8c)).

It now becomes evident that, in escape conditioning, the 'negative' relation between the aversive stimulus ('freezing weather' in (9) or 'the cold war' in (10)) and the instrumental response ('wearing warm clothes' in (9) or 'negotiating' in (10)) is contingently necessitated not because of the expected consequences of the aversive stimulus (as is the case with avoidance conditioning), but because of the continuous presence of its occurrence. Correspondingly, in the case of L2 acquisition, examples such as (5a–c) and (6a–c) have already been accounted for in terms of the second form of avoidance conditioning, that is, *delay* of the occurrence of the aversive stimulus. If, again, these examples were to be considered instances of escape behaviour under the same psycholinguistic condition (where the learner would experience difficulty/pain with the linguistic aspects discused above), then the indispensable condition of this behaviour (i.e. the continuous presence of the aversive context or contexts identified in (4a)) would also have to be met, and thus the statements of (5a–c) and (6a–c) would be something like (11a–c) and (12a–c) respectively.

(11) a. The lexical gap resulting from the 'failure' to produce lexical items such as *articulate* (V), *equilibrium* (N), and *capable* (A) within their semantic context or contexts is **escaped** through the production of different, but semantically identical, lexical items such as *say* (V), *balance* (N), and *able* (A) respectively (cf. property (8a)).

b. Production of the latter set of lexical items is reinforced by the termination of the lexical gap resulting from the 'failure' to produce the former set (cf. property (8b)).

c. The experienced consequences of this termination maximize the reinforcement of producing the latter set (cf. properly (8c)).

(12) a. The syntactic gap resulting from the 'failure' to use a grammatical rule such as that incorporated in a sentence like *If*

Ghiath was employed his problems would be solved is **escaped** through the use of a different, but pragmafunctionally identical, grammatical rule such as that incorporated in a sentence like *Ghiath's employment would solve his problems* (cf. property (8a)).

b. The use of the latter grammatical rule is reinforced by the termination of the syntactic gap resulting from the 'failure' to use the former rule (cf. property (8b)).

c. The experienced consequences of this termination maximize the reinforcement of using the latter rule (cf. property (8c)).

In such a way, identification of escape conditioning seems to differentiate it more sharply from avoidance conditioning in learning situations such as L2 acquisition. The stipulation that escape conditioning is determined by the continuous presence of an aversive stimulus as seen above plainly suggests the prior existence of **external precausation** in the sense that the external precausative factor (be it a human or nonhuman agent) acts as a 'psychophysical' *primary cause* for the occurrence of the aversive stimulus (e.g. the aversive context or contexts which require(s) the use of lexical items such as the former set in (11a) or grammatical rules such as the 'unreal' conditional in (12a)). This aversive stimulus will, in turn, act as a no-less-important *secondary cause* for the performance of an instrumental response (e.g. the use of the latter set of lexical items in (11a) or the subjectivization-objectivization rule in (12a)). Paradoxically, avoidance (i.e. delay) of a potential aversive stimulus that has not yet been present would connote an ontological necessity for **internal precausation** which has no location in nature other than the active avoider's mind. On the basis of the succession of the relevant thoughts that he/she entertains, this internal precausative factor acts as a 'mental' *primary cause* for the anticipation of the occurrence of the aversive stimulus (cf. (5a) and (6a)), whose expected consequences will, in turn, act as a no-less-important *secondary cause* for the performance of the instrumental response (cf. (5b) and (6b)). But how can the absolute 'absence' of the aversive stimulus (as one can perceive it) reinforce, and subsequently increase the strengthened possibility of, the occurrence of the instrumental response? This apparently fundamental question

has not yet received a satisfactory answer in current research on behaviourist and cognitivist psychology (see, for example, Domjan and Burkhard 1993, p.262). It may be that the internal precausative factor just mentioned would establish a sufficiently unmistakable force of impetuous and impulsive prediction, an inner force which enables the active avoider to successfully realize the extent of the affective state (difficulty, pain, fear, apprehension, etc.) when the aversive stimulus is likely to occur. Prevention or delay of this occurrence is clear evidence of the active avoider's **intuitive knowledge** of both the situation created by the aversive stimulus and the natural response replaced by the instrumental response through the avoidance behaviour (the term 'intuition' will be explained in detail in the next section). More specifically, in L2 acquisition this means intuitive knowledge of both the avoided L2 structure and the aversive context or contexts which require(s) its production. The natural response is the avoided L2 structure itself and the instrumental response is the substitutive L2 structure (in Schachter it was called 'paraphrase')[16] which the learner resorts to as an alternative procedure for filling in the consequential gap (cf. (4a–d) above).

Given the critical distinction between escape conditioning (termination of a present aversive stimulus) and avoidance conditioning (prevention or delay of an absolutely 'absent' aversive stimulus), a further distinction must then be made between prevention and delay in order to reemphasize the positive role of avoidance behaviour in sociopolitical practice and L2 acquisition respectively. While **prevention** may well entail *habituation* of the avoidance procedure, whereby the possibility of producing the natural response decreases, **delay** implies *sensitization* of the natural response, and thus its *activation*, at a later stage, particularly when the aversiveness of the stimulus that is expected to trigger the avoidance procedure is overpowered. Clearly, the former type of avoidance would result in *permanent* attempts to prevent difficulty/pain in sociopolitical practice, and the latter in *temporary* attempts to delay difficulty/pain in L2 acquisition. It is, therefore, the implication of delay that must be understood as the ultimate type of avoidance that is determined by the general psycholinguistic principle illustrated in (7a–c) above. Whether or not this implication was meritorious or desirable was not an issue for Schachter, Kleinmann, and others, since the learner's intuitive knowledge of the avoided L2 structure identified in (4b) was not explained

in any perceivable way.

Recall, again, that delay suggests intuitive knowledge of both the avoided L2 structure and the aversive context or contexts which require(s) its production. Now if the learner's nonproduction of a given L2 structure can indeed be taken as a reflection of avoidance, then this would entail his/her intuitive knowledge of both the linguistic and pragmafunctional properties of that structure.

2 The ontology of cognitive predeterminism

As discussed at the outset of the previous section, the striking similarity between the Avicennian and the Cartesian versions of dualism is a historical indication that the mind-body problem is not at all a trivial one. Corollaries of the deductive concatenation of mentally incipient conditions (the 'prestate' of the mind) and physically precocious conditions (the 'poststate' of the body) would emphasize, for Avicenna at least, the thesis that perception (be it 'practical' or 'theoretical') bases its functioning upon the vital organic forces which are in themselves the foundation for the physically precocious conditions of the body (cf. note 4). This means that the ontological parallelism of the mind and the way it rationalizes itself (i.e. the mind's entity and its existence respectively) is in principle a higher level of the physical interface where the ontological parallelism of the body and the way it corporealizes itself (i.e. the body's entity and its existence respectively) forms a lower level. The latter level, so it appears, is qualitatively different from the former, a 'materialistic' conception of the workings of the mind that coincides in large measure with Hobbes's fundamental assumption that the knowledge acquired by reason (or 'ratiocination' in his terminology) commences with the *a priori* principle of causation as seen earlier (cf. note 5). But Hobbes's materialism, as we have also seen, stands in sharp contrast to Descartes' rejection of the correlation between the unconstrained mechanisms underlying voluntary behaviour (including consciousness) and the reflex mechanisms operating within involuntary behaviour, even though the former does not deny the mind-body dichotomy in its Cartesian formulation.

Therefore, in order to resolve the conspicuous intricacy of this intellectual background, the Cartesian version of dualism can at best be viewed as a conceptual mediation between Avicenna's 'non-elimi-

native materialism' and Hobbes's 'deterministic materialism', notwithstanding the historical interlude (over six centuries) that separates Avicenna's society from those of the other two philosophers. As the term 'non-eliminative materialism' indicates, the doctrine does not eliminate investigations into the mental phenomena that cannot be explained in 'physical' terms from its object of inquiry, even though, within the mind's evolutionary cycle, it takes this entity and its existence as indirect by-products of an unremitting transformation from the lower level of organic matter to a higher one (cf. Marwa 1980, vol. II, pp.568f.).[17] From a different but related perspective, 'deterministic materialism' holds that all mental phenomena are ultimately determined by the vital motion that occurs inside the body; the potential for this vital motion determines the developmental changes and is, in turn, determined by the environmental changes, as discussed earlier. What is more, with the emergence of Newton's (1643–1727) scientific conception of the physical world, it was necessary therefore to postulate a new principle to account for a physics of matter in motion, an attractive force that governs the motions of bodies, whilst at the same time a rationalist psychology that attempted to discover the properties of the mind (the Cartesian version of dualism) was "prematurely abandoned, in part on quite spurious grounds" (Chomsky 1972, p.8). Naturally, this abandonment appealed to a highly intractable assortment of methodological 'isms' such as Comte's (1798–1857) positivism and Pierce's (1839–1914) pragmatism, let alone the empiricism of Locke and his followers, simply because the collective allegation was that mental phenomena, if they were to be studied as existent phenomena, should not go beyond the bounds of the natural sciences.

But naturalism, as a general philosophical doctrine which pledges special allegiance to scientific methodology, purports no departure from other methodologies in its search for a plausible understanding of the world. Depleted of its abidingly metaphysical import, a naturalistic approach to the study of the mind can be perceived as an approach whose aim is to scrutinize the mental aspects of the world, and therefore "to construct intelligible explanatory theories, with the hope of eventual integration with the 'core' natural sciences" (Chomsky 1993, p.182). This variety of naturalism (identified as 'methodological naturalism') seeks to do so in much the same way a naturalistic approach, or any other 'scientific' approach, seeks to investi-

gate the physical aspects of the world. As such, knowledge of language in L1 acquisition or L2 acquisition is not just the general level of cognition of the I-language (i.e. the mental reality) underlying actual production in normal conditions, but also the particular level (or sublevel) of cognition that *predetermines* the nonproduction (i.e. avoidance) of certain structures in certain conditions, as will be discussed presently. Although the type of scientific inquiry adopted by methodological naturalism may help explain the former level of cognition, it should not be taken as a logical impediment of drawing on an **ontological** approach that may contribute to the identification of the latter level (or sublevel), since one of the persistent goals in the history of human thought is to unify several different theories about the world, including human nature.

In contemporary philosophy, as Baldwin (1993) points out and Chomsky (1993) restates, there has been in the foreground a rather obtrusive tendency towards the 'naturalization' of philosophy over the last twenty years. Baldwin delineates the outstanding features of two further distinct, but related, varieties of naturalism which are said to be the most significant varieties in current philosophy: first, what he terms *epistemic naturalism;* and second, *metaphysical naturalism* (cf. Chomsky 1993, p.185). A résumé of the scope and limits of either variety will be considered respectively for the arrival at the specific ontological approach that we adopt in the present study.

With respect to *epistemic naturalism* (an enterprise that derives from Quine's (1969) notion of 'epistemology naturalized'), the principal contention is that the attained states of general cognitive systems such as knowledge and belief (including language) should be accounted for in terms of **causational** evaluation rather than **consequential** justification, the former being mainly based on an evolutionary theory which holds that 'reification' of bodies comes in stages in the acquisition of such systems (Quine 1992). In this sense, the enterprise would not explain the results of the individual's attempts to justify his/her claims to knowledge and belief, but rather the 'psychophysical' cause or causes of how the individual comes, and inevitably comes, to have the sorts of knowledge and belief he/she has. Given the rather physicalistic and operationalistic outlook of this approach, investigations into general cognitive systems such as these ought to be, for Quine, amalgamated into a narrow branch of behaviourist psychology, though having roots in Hume, who compared his philosophical

speculations with Newton's scientific discoveries. Chomsky argues that Baldwin seems to observe a broader version of epistemic naturalism where the physical and mental aspects of the world are considered to interact through the mediation of natural relations 'without arbitrary strictures'. In such a perspective, the broader version can be looked upon as a conceptual development of the rationalist psychology of the seventeenth century, which sought to examine the "principles or notions implanted in the mind ... [as] ... a direct gift of Nature", an excerpt Chomsky (1993, p.185) quotes from Lord Herbert's *De Veritate* (1624).

As we saw in the preceding section, the critical issue in which rationalism (innatism or nativism) and empiricism (behaviourism being no more than an historical outgrowth) diverge substantially is the acquisition of knowledge and the construction of cognitive systems, though it is not always necessary to sharply contrast the two trends as this contrast can be neutralized in some other respects. One such respect is the conception of 'the innate vigour and activity of the mind', extensively discussed by the rationalist philosopher Cudworth in his *Treatise* (1731) to support the view that ideas may not be impressed upon the mind through the reception of 'imaged' sensible objects, even if the cogitations of such ideas may occasionally be instigated by the motion of such objects; this is "because sense takes no cognizance at all of any such things in those corporeal objects, and therefore [those ideas] must arise from the innate vigour and activity of the mind itself" ([Book IV]; quoted in Chomsky 1965, p.49). Having illustrated this 'rationalist' conception, it is not surprising that, as Chomsky stresses Leibniz's and many commentators' remarks, essentially the same conception can be found in the work of the 'empiricist' Locke, whose "willingness to make use of a principle of 'reflection' makes it almost impossible to distinguish his approach from that of the rationalists" (Chomsky 1972, p.81). This clearly indicates that, concerning the formation of ideas through the interplay between mind and sense, the so-called rationalists did not overlook the significant role of sense data when making no sharp distinction between perception and acquisition, but rather they maintained that the appropriate instigation (or 'activation') of latent mental structures makes them available for the interpretation of these data. Nor did the so-called empiricists deny the polarity of mind and body or the existence of an innate property of the former, though restricted, so it ap-

pears, to the procedures and mechanisms for the acquisition of knowledge specifically. For instance, the procedure of 'experimental reasoning' is, according to Hume, a basic instinct in the organism (a human or an animal) that is derived 'from the original hand of nature', and thus the acquired form of knowledge is entirely determined, otherwise it is quite *free* (cf. Chomsky 1965, p.521).[18]

As noted earlier, the notion of 'freedom' has its biological roots in avoidance and escape behaviours, and the individual's attempts to struggle for this freedom are 'historically inevitable'. Given that the individual learns how to avoid things without instruction, the notion of 'freedom' is thus one of the notions that are fixed in advance as dispositions of a latent mental structure, for which reason avoidance constitutes a potential property (principle or subprinciple) of the mind. Naturally, this is not to say that, following Hume's argument, the form of knowledge acquired through this procedure is free (as in the case of what is acquired through 'nonexperimental reasoning'), but rather it is entirely determined by an *innate* notion of 'freedom', a very different matter. In L2 acquisition, this means that the form of linguistic knowledge underlying instrumental responses such as (5b) and (6b) in section 1 is entirely determined by an *innate* notion of 'linguistic freedom'. But what determines, or rather 'predetermines', the form of linguistic knowledge underlying the avoided responses (5a) and (6a)? An obvious answer would be: whatever is predetermined by a particular level (or sublevel) of cognition. Yet, a far more compelling question would arise: what is the nature of this particular level (or sublevel) of cognition? The answer to this question would be far from plausible without close investigation into the type of 'intuition' that the learner would have of the avoided L2 structure, an extremely abstruse issue, so it appears, in the general theory of knowledge, not to speak of epistemic naturalism which we are now addressing. Let us put the question aside for the moment, and consider what insights we can gain from epistemic naturalism and how such insights, being insufficient, are supplemented for our purpose.

As is evident from this exposition, the epistemic naturalism of the seventeenth and eighteenth centuries was a 'scientific enterprise' whose pivotal ambition was to designate 'an empirical theory of mind'. Hume, for instance, drew an analogy between his philosophy and Newton's physics, as mentioned above. More significantly, Hobbes's *Elements of philosophy, the First Section Concerning Body* (1656),

being the English version of his *De Corpore* (1655), was mainly inspired by the rational and methodical systematicity of Euclid's *Elements of Geometry*. The *a priori* principle of 'matter in motion' referred to in the preceding section was, for Hobbes, the 'gate of **natural philosophy** universal' which was opened by Galileo in his scientific endeavour to study 'the paths taken by projectiles and falling bodies' (cf. Woolhouse 1988, p.30). Hobbes, as we have also seen, applied this *a priori* principle in his moral philosophy to account for mental phenomena (love, aversion, etc.) in terms of 'motions of the mind', and, with the emergence of Harvey's cardiological discoveries, reduced such motions to the vital motion of the blood circulated by the heart (cf. Avicenna's notion of 'vital organic forces'). On this basis, Hobbes identified the mind's constant control over voluntary behaviour with the general principle 'pursuit of pleasure and *avoidance* of pain' as one variant of the more general principle **hedonism** (see also note 6). It follows that, within the framework of 'psychological hedonism' (a doctrine which is distinct from but related to 'ethical hedonism'), one of the proposals put forward to construct a general principle or principles governing voluntary behaviour was a thesis called '**motivation by pleasant thoughts**'. In short, this thesis makes its logical assertion in the following way:

(13) The individual will prefer or choose (to do) **X** rather than **Y**, if and only if the thought of **X** (with its expected consequences) is more pleasant, or less painful, than the thought of **Y** (with its expected consequences).

Seen as one special adaptation of the general principle 'pursuit of pleasure and *avoidance* of pain', this thesis appears to convey an obvious and straightforward statement about 'conscious preference' or 'conscious choice' to do something or act in a certain way. As such, it could be implemented as an experimental technique in the form of an *analytic* proposition for setting forth a particular test whose results would enable the tester to establish whether the tested individual has in fact preferred or chosen (to do) X rather than Y; this is not in dispute. However, insofar as voluntary behaviour may also occur as a reflection of the individual's **nonspecific** initiation of 'conscious decision-making' (an important issue which epistemic naturalism did not deal with), the thesis of 'motivation by pleasant thoughts' would not be in a position to offer a precise principle or

principles governing this behaviour due to the apparently *synthetic* nature of its proposition. On this account, the thesis may not be capable of explaining the fact (on the stipulation that it is indeed a fact) that sometimes the thought of X (with its expected consequences) is not more pleasant or less painful than the thought of Y (with its expected consequences), but the individual simply decides to do X rather than Y for no specific reason (cf. Edwards 1972, vol. III, p.433).

Clearly, therefore, within its *analytic* application, the thesis of 'motivation by pleasant thoughts' would study certain aspects of voluntary behaviour by means of schematized elaboration of experimental tests, hence the collection of evidence is an indispensable criterion. Yet, criticism of the *synthetic* proposition would require that the thesis go beyond the observations of experimental tests to the construction of theoretical explanation for what is observed in reality. This indicates that, in relation to the general principle 'pursuit of pleasure and *avoidance* of pain', the former proposition would confine itself to a minimal effort to analyse certain enduring changes that affect the mechanisms of voluntary behaviour (i.e. certain aspects of learning), whereas the critical account of the latter proposition (the synthetic) would impose a far greater effort to address all aspects of voluntary behaviour that have to do with 'conscious preference/choice' as well as the individual's nonspecific initiation of 'conscious decision-making'. But, in any event, the thesis in (13) sets no restrictions on the *sort* of goal that may be pleasant or painful to the individual, and thus finding the thought of X more pleasant or less painful than that of Y does not necessarily turn out that only the notion of pleasure itself is desirable (as ethical hedonism would affirm).[19] More specifically, in examples of avoidance behaviour that occur in sociopolitical practice such as (2) and (3) in section 1, the instrumental responses (2b) and (3b) would not be viewed as fulfilments of anticipated pleasure: individuals simply do not get the pain from freezing weather in (2), or leaders simply do not engage in hot war in (3). By analogy, in examples of avoidance behaviour that occur in L2 acquisition, such as (5) and (6), the learner takes no pleasure in producing the instrumental responses (5b) and (6b): he/she simply avoids undesirable impediment of communication (either a lexical gap in (5) or a syntactic gap in (6)).

Whether the thesis of 'motivation by pleasant thoughts' in (13) provides useful insights into 'conscious preference/choice', or

whether or not it is able to account for the individual's nonspecific initiation of 'conscious decision-making', is not to be discussed within the scope of the current study, since both experimental and theoretical commitment focuses attention upon what is in fact observed, be it in the limited world of the experiment or in the unlimited actual world. In other words, concerning avoidance behaviour as just seen, issues such as 'conscious preference/choice' and 'conscious decision-making' address themselves directly to the actual production of the instrumental response, (say, X rather than Y) an entity that is *present*, and therefore observable, in the unit of avoidance behaviour. Though undoubtedly worthy of serious investigation, it seems, such issues would yield no information about the nonproduction of the natural response (or the avoided response), the entity that is always *absent* from the unit of avoidance behaviour, and thus the difficult problem of identifying the particular level (or sublevel) of cognition which predetermines this response would be far from elucidating. For exactly the same reason behaviourists and behaviour analysts alike eschew discussion of the avoided response, as we have seen in the preceding section (perhaps this may be an example of what may be called 'conceptual avoidance'!).

To examine the avoided response (say, Y rather than X) is therefore to examine the **ontological** necessity of Y, the nature of cognition that the active avoider has of Y, and, more importantly, the way the attained gnosiological state of Y exists as a *latent* entity in his/her mind. Plainly, the attempt to understand the 'mental' cause or causes of the attained gnosiological state of Y (i.e. the **internal precausation** mentioned at the end of the preceding section) is beyond the bounds of any approach that identifies itself with epistemic naturalism, be it the narrow version which is incorporated into a special branch of behaviourist psychology or the broad version that can be viewed as an outgrowth of the rationalist psychology of the seventeenth century. On the one hand, the **causational** evaluation that the narrow version is mainly concerned with, as seen, would confine the analysis exclusively to the 'psychophysical' cause or causes of the attained states of general cognitive systems such as knowledge and belief (including language). On the other, the allowance of a 'rationalist' dualism in the broad version may encourage research into the mental reality underlying actual production in normal conditions (as is the case with methodological naturalism), but not the ontological reality

of cognition that predetermines the nonproduction of certain structures (the avoided response Y) in certain conditions. Nevertheless, a schematized outline of some of the major issues that are related to epistemic naturalism has in fact led to the thesis of 'motivation by pleasant thoughts' and its logical assertion of (13), a worthwhile thesis in psychological hedonism which ought to be considered from a far deeper perspective for a possible understanding of this ontological reality, as will be seen presently.

With regard to the second variety of naturalism referred to earlier in this section, viz. what Baldwin (1993) calls *metaphysical naturalism*, the enterprise, again, would not be helpful, since one of its major problems lies in the formidable question of "what the 'natural' sciences are", provided that even the most 'fundamental' sciences have had to be changed, sometimes radically. Thus, the claim that a metaphysical-naturalistic form of inquiry into mental phenomena and attained states of cognition should be 'harmonious' with the natural sciences cannot be acknowledged unless its advocates clarify what they exactly mean by 'the natural sciences'. In an attempt to answer this question, Chomsky refers to what he calls 'the science-forming faculty' (SFF), which is in principle similar to Bromberger's (1992) notion of 'p-predicament', a faculty incorporating virtually all the mental aspects that enter into naturalistic inquiry. Within its potential scope, SFF may enable the individual to understand and answer certain questions, attain 'new' states of cognition, modify 'old' ones, and the like; however, within its potential limits, SFF offers nothing but a 'blank stare'. This leads to an important distinction, albeit not necessarily sharp, between *problems* that are essentially solvable within the potential scope of SFF and *mysteries* that are not, meaning that "the successful natural sciences ... fall within the intersection of the scope of SFF and the nature of the world" (Chomsky 1993, p.188).

It follows from the above that if metaphysical naturalism purports to be 'successful', then its inquiry into mental phenomena and attained states of cognition should be 'harmonious' with 'the successful natural sciences' in the sense intended here. Yet, even if this condition is met, which is not unlikely, 'success' will demarcate the limits of SFF more conspicuously, and thus the 'mysteries' being talked about will be far beyond the scope of metaphysical naturalism, not to mention such derivative 'isms' as Quine's 'eliminative materialism'.[20] The attained gnosiological state of Y (the avoided response) is a 'men-

tal fact' which constitutes one such 'mystery' not because it is an unknowable phenomenon, but because it is so 'simple' and so 'familiar' that we really do not know it at all, an uncontentious issue that has repeatedly been discussed in literary criticism and philosophy. In literary criticism, for instance, Shklovsky writes: "people living at the seashore grow so accustomed to the murmur of the waves that they never hear it. By the same token, we scarcely ever hear the words which we utter ... We look at each other, but we do not see each other any more. Our perception of the world has withered away; what has remained is mere recognition". Similarly, in philosophy Wittgenstein (1953) notes that "the aspects of things that are most important for us are hidden because of their simplicity and familiarity (one is unable to notice something – because it is always before one's eyes)" (all cited in Chomsky 1972, pp.24f.). Therefore, the 'mental fact' of Y, like any other 'mental fact', cannot be 'discovered' by metaphysical naturalism (or any other scientific 'ism') since the individual is intuitively acquainted with it: it is 'obvious once pointed out', but whose aspects are not observed due to its constant presence in his/her mind. Less observed is the failure to pay attention to the requisite for investigation into the *complexity* of operations underlying a 'mental fact' that is so 'simple' and so 'familiar'.

By analogy, the logical assertion of (13) cannot be viewed as a 'discovery' achieved within the framework of psychological hedonism because it is a matter of intuitive familiarity. Yet investigations into the chain of operations underlying its mental reality would certainly contribute towards the identification of the level (or sublevel) of cognition that predetermines the avoidance phenomenon in L2 acquisition, a challenging question which compels the honest researcher to search for a possible answer in other forms of inquiry, since one of the obdurate goals, to reiterate, is to unify various theories about the world, and therefore about human nature. Hence, the methodological distinction between science and philosophy should be made clear, given the 'problems-mysteries' dichotomy referred to above. Scientific theories attempt to convey everything relevant about the *form* whereby a given gnosiological state is delivered; whereas philosophical inquiry would require some supplementary account which exceeds the bounds of science. In both extremes, Chomsky argues, there exists "a crucial distinction based on access to consciousness, perhaps a ['purely'] metaphysical distinction" (Chomsky 1993,

pp.198), a distinction that was also emphasized by Bergson in his *Mélanges* (1972, p.747). After all, a central part of 'pure' metaphysics is **ontology**, a discipline which infers that a given gnosiological state (or anything) really exists because certain conceptual operations are *latently related* in certain ways. Such a discipline does not emerge from nowhere; it has always been used as a necessary method of philosophical inquiry into the nature of cognitive phenomena that cannot be explained by the natural sciences.

In L2 acquisition in particular, probing the attained gnosiological state of Y (the avoided L2 structure) from an **ontological** perspective is crucial for the identification of the level (or sublevel) of cognition being talked about due to the *latent relatedness* of specific conceptual operations which reflect the real existence of this state. In order to undertake such a complex task let us first examine the tortuous arguments that can be extrapolated from the thesis of 'motivation by pleasant thoughts' in (13). This analysis will later be taken as a preliminary to the more complex task of scrutinizing the 'mental' cause or causes of the type of 'intuition' that the learner would have of the avoided L2 structure. The logical assertion of the thesis in (13) is repeated here for convenience.

(13') The individual will prefer or choose (to do) X rather than Y, if and only if the thought of X (with its expected consequences) is more pleasant, or less painful, than the thought of Y (with its expected consequences).

Looking at the thesis from a different angle, a more careful inspection of its logical assertion will bring to light the truistic but 'clandestine' fact that, in either proposition (the analytic or the synthetic), the individual is consciously and premeditatively aware of the expected consequences of *both* the thought of X *and* the thought of Y. Furthermore, conscious and premeditative *awareness* in this sense would also imply real existence of some sort of conscious and premeditative *knowledge* that the individual would have already attained of both the entity of X and the entity of Y, be they a pair of actions (with their relevant situations) or, by analogy, a pair of L2 structures (with their relevant contexts). This indicates that the latter gnosiological state is both nonindividuated from and prioritized to the former; 'nonindividuated' in the sense that there is an interdependency relation between the two gnosiological states, albeit qualitatively differ-

ent, and that this relation is characterized by a **cogitatively integrational** nature.[21] In such a perspective, nonindividuation and prioritization hypostatize an ontologically *associational* transition from one level of cognition to another: first, knowledge of both the entity of X and the entity of Y (i.e. the latter gnosiological state); and second, awareness of the expected consequences of both the thought of X and the thought of Y (i.e. the former gnosiological state). Moreover, this associational transition, in turn, hypostatizes a *singularly* qualitative difference between the two gnosiological states. To avoid possible confusion, some abbreviations will be employed here: (**KNE**) stands for knowledge of the entity of a given item X (where **KN** is 'knowledge' and **E** is 'entity'); and (**AWT**) stands for awareness of the expected consequences of the thought of X (where **AW** is 'awareness' and **T** is 'thought'). Thus, the **cogitatively integrational** relation between the two gnosiological states just discussed can be expressed within the following logical assertion:

(14) a. Given two items X and Y such that [**KNE** of (X and Y)] is both nonindividuated from and prioritized to [**AWT** of (X and Y)].

b. For any such X and Y, there is an interdependency relation between [**KNE** of (X and Y)] and [**AWT** of (X and Y)], even if the ontologically *associational* transition from the former gnosiological state to the latter hypostatizes a *singularly* qualitative difference between the two.

Returning to the thesis in (13'), its logical assertion also underlines the truistic fact that, in either proposition (the analytic or the synthetic), the individual will prefer or choose (to do) one and only one of the two items in a particular unit of 'hedonistic' behaviour (say, X rather than Y). This clearly indicates that, unlike the statement in (14a), the gnosiological state of the 'nonpreferred' or 'nonchosen' item (i.e. [(**KNE** and **AWT**) of Y]) is both individuated from and nonprioritized to that of the 'preferred' or 'chosen' item (i.e. [(**KNE** and **AWT**) of X]); 'individuated' in the sense that, unlike the statement in (14b), there would be *no* interdependency relation between the two gnosiological states which would, instead, establish a **cogitatively differentiational** relation (see also note 21). As such, individuation and nonprioritization hypostatize an ontologically *dissociational* transition from one level of cognition (i.e. [(**KNE** and

AWT) of X]) to another level or sublevel (i.e. [(**KNE** and **AWT**) of Y]). This dissociational transition, in turn, hypostatizes a *dually* qualitative difference between the two: at one end, a qualitative difference between (**KNE** of X) and (**KNE** of Y); and at another, a qualitative difference between (**AWT** of X) and (**AWT** of Y). Now if it is correct at this point to regard X as the instrumental response and Y as the avoided response, then we seem to go towards a serious attempt to identify the ontological level (or sublevel) of cognition which predetermines the avoidance of a particular L2 structure. Through careful scrutiny into the type of 'intuition' that the learner would have of the avoided L2 structure, the complexity of this identification will be greatly illuminated, especially when we consider how this type of 'intuition' differs from others within the general theory of knowledge, as will be seen presently. But first, in the light of the logical assertion of (14), let us put forward the **cogitatively differentiational** relation between the gnosiological state of the instrumental response X and that of the avoided response Y within the following logical assertion:

(15) a. Given two items X and Y such that the cogitatively integrational relation between [**KNE** of (X and Y)] and [**AWT** of (X and Y)] is identified with the logical assertion of (14).

b. Given such X and Y, the individual will avoid Y rather than X if and only if [(**KNE** and **AWT**) of Y] is both individuated from and nonprioritized to [(**KNE** and **AWT**) of X].

c. For any such X and Y, there is *no* interdependency relation between [(**KNE** and **AWT**) of X] and [(**KNE** and **AWT**) of Y], since the ontologically *dissociational* transition form the former gnosiological state to the latter hypostatizes a *dually* qualitative difference between the two.

It should be noted, however, that not all the 'mental' causes of the attained gnosiological state of Y (i.e. **internal precausation**) are inherent in the logical assertion of (15). One can only say at this point that the cause of the cogitatively differentiational relation between [(**KNE** and **AWT**) of X] and [(**KNE** and **AWT**) of Y] is reducible to the absence of the interdependency relation between the two, that the cause of this absence is reducible to the dissociational transition

which hypostatizes a dually qualitative difference between the two, and that the cause of this dissociational transition is reducible to the individuation and nonprioritization of the latter. As discussed at the end of the preceding section, avoidance (i.e. delay) of an 'absent' aversive stimulus implies an ontological necessity for internal precausation that operates in the active avoider's mind. It is, therefore, (**KNE** of Y) that acts as a 'mental' *primary cause* (i.e. the precausative factor) for the anticipation of the aversive context of Y; (**AWT** of Y), in turn, acts as a no-less-important *secondary cause* for the nonproduction of Y, and subsequently the production of X. But what causes the individuation and nonprioritization of [(**KNE** and **AWT**) of Y] (a further 'mental' cause that is not inherent in the logical assertion of (15))? The answer to this question would certainly have to do with a mode of cogitation that is governed by a system of *immobile* cognition whose object (in this case the avoided response Y itself) cannot be produced at a certain stage, given the dually qualitative difference between [(**KNE** and **AWT**) of X] and [(**KNE** and **AWT**) of Y] as seen above. This means that the quantitative capacities of the two gnosiological states are, in principle, symmetrically balanced, and that, if they do differ, they only differ in the quality of cognition which determines their modes of cogitation, for which reason the interdependency relation between the two is absent. Thus, the mode of cogitation of [(**KNE** and **AWT**) of X] is, in contrast, governed by a system of *mobile* cognition whose object (the instrumental response X) is the only alternative that the active avoider resorts to in voluntary behaviour at that stage.

Generally, the polarity of *mobile* and *immobile* cognition forms one of the central topics of **epistemology** (also called 'theory of knowledge', 'gnosiology', etc.). In a sense, it has been expressed in terms of the distinction between *practical* and *impractical* knowledge respectively, the latter being a fundamental property which characterizes the capacity of a specific type of 'intuition'. Within its broadest conception, the term 'intuition' is used to indicate an 'immediate apprehension' of the object intuited, a conception that has played a significant role in philosophical controversy, but whose abstruse and enigmatic nature is ascribable to the polysemous import of the terms 'immediacy' and 'apprehension'. While 'immediacy' can have as many senses as there exist different embodiments of mediation (e.g. to signify the absence of inference, the absence of verified propositions about the object intuited, etc.), 'apprehension' is used to refer to such

disparate states of cognition as sensory intuition, nonsensory intuition, or even mystical rapport.[22] The apparent confusion that would arise from this polysemous import makes it sufficiently persistent to adumbrate the outstanding features of the major types of 'intuition', and to discuss in some detail the specific type that may explain the mental cause of the individuation and nonprioritization of [(**KNE** and **AWT**) of Y] in (15b). Philosophers often speak of types of intuition that can be classified under two general categories: first, noninferential knowledge of the object intuited; and second, nonpropositional knowledge of the object intuited. These are illustrated in (16) and (17) respectively (cf. Edwards 1972, vol. IV, pp.204f.).

(16) **Intuition as Noninferential Knowledge**

a. Intuition of unjustified truths (or true beliefs) may take the form of knowledge that the individual cannot account for, simply because he/she is unconscious of the reasons which led to it. This type of intuition is commonly referred to as a 'hunch'.[23]

b. Intuition of justified truths (or true beliefs) may take the form of knowledge that one can have without having made oneself conscious through the process of any justification of these truths (or true beliefs). This type is philosophically more important than (a) due to the puzzling antinomy implicit in its cognitive capacity.

c. Intuition whose cognitive capacity is distinct from that of type (a) or (b), but the form of knowledge it may take does not entail definability of the object intuited.

(17) **Intuition as Nonpropositional Knowledge**

a. Sensory intuition (i.e. intuition of an object present to the senses) is a necessary condition for the individual's knowledge of *a posteriori* truths (or true beliefs), but whose cognitive capacity is distinct from that of forming judgements concerning the object intuited.[24]

b. Nonsensory intuition of universals such as substance and nonsubstance, or (as in Kant) of insensible particulars such as time and space. Intuition of this type is a necessary condition for the individual's knowledge of *a priori* truths (or true beliefs).

c. Inexpressible intuition whose cognitive capacity, unlike those of types (a) and (b), does not verify the individual's knowledge of

propositions about the object intuited at a given stage. This type refers to Bergson's notion of 'intuition'.

A moment of reflection will clearly indicate that the attained gnosiological state of Y in (15b), its mode of cogitation in particular, is germane to the functioning of intuition of the general category (17) rather than the general category (16), even though both involve an 'immediate apprehension' of the object intuited (i.e. Y itself). This is because the capacity of intuition in this case dictates that 'nonpropositional' knowledge of an object (i.e. its entity and its thought) may be a necessary condition for, but is not congruent with, 'intuitive' knowledge of the truth of proposition about that object, given the *impractical* nature of the latter. However, the conscious and premeditative cogitation of Y (cf. (13') and the analysis that follows) cannot be viewed as pertinent to 'sensory intuition' of the type (17a) simply because this type, especially when its capacity is distinguished from that of forming judgements, reflects the mental reality underlying actual behaviour (i.e. production) below the level of conscious and premeditative cogitation (see also note 24). Nor can it (i.e. Y) be viewed as pertinent to 'nonsensory intuition' of the type (17b) since its capacity refers to a specific form of 'pure' knowledge in Kant's sense (*Critique of Pure Reason*), or 'knowledge by acquaintance' as Russell describes it (in *The Problems of Philosophy*), a form that is said to occur prior to the ability to learn language (cf. nativism in section 1). Rather, the mode of cogitation of [(**KNE** and **AWT**) of Y] in (15b) has to do with the capacity of 'inexpressible intuition' in the sense intended by Bergson (cf. 17c) who, as a proponent and elaborator of 'nonpropositional knowledge', holds that language, under certain circumstances, is inadequate to express the object intuited in its precise terms, for which reason comparisons and metaphors are employed under these circumstances. This is clear evidence of the *impractical* capacity of this intuition as well in that the object intuited (i.e. Y) cannot be manipulated for intentional purposes of action at a given stage (cf. the conceptual-intentional (C-I) subsystem for contrast in note 24). Intuition, so understood, establishes a form of knowledge that is free from the 'distortions' of action and, being removed from the bias of the practical, requires a *cogitative* effort (i.e. concentration of thought) that is different from action. Consequently, if all that is involved in the object intuited is seen in general as a process of

'immediate apprehension', or **'conscience immédiate'** in Bergson's (1934, p.35) terminology, then intuition must permit access to an interaction of some other mental processes.

It follows that at least two divergent accounts of the notion of 'immediacy' can be traced in the epistemology of the seventeenth century onward. First, in the sense-datum theory (including phenomenalism and functionalism), the term 'immediacy' is used to refer to what is currently present to conscious awareness (cf. 17a), a cognitive state that necessitates the attainment of others by means of inference and propositions (immediacy *de facto*). Bergson (1896) seems to draw on this sense when speaking of perception, memory, and freedom (cf. the innate notion of 'linguistic freedom' discussed earlier), meaning that the incorporation of these mental phenomena by immediate apprehension is not altogether abstracted from intuition (see also the medieval notion of 'abstractive cognition' in note 22). Second, in the empiricist theory of knowledge (including sensationalism and pragmatism), the term 'immediacy' is restricted to an initial cognitive state (the 'primitive base') that has undergone evolutionary transformations to reflect the 'pragmatic' character of the present state of conscious awareness (immediacy *de jure*). On this account, Bergson (1889) attempts to explain the capacity of what he calls 'intellect' (or 'intelligence'), a practical capacity that can be counterposed to the impractical capacity of intuition, notwithstanding the interface level between the two (cf. Lacey 1989, pp.156f.). This indicates that a fundamental part of the interface level between intuition and intellect has to do with the functioning of immediate apprehension, whereby the former intuits an object without reducing it to a set of qualities that can be appropriately classified in precise terms at a given stage, for which reason the object intuited is called 'inexpressible' (this matter will be discussed presently).

From the two divergent accounts of 'immediacy', Bergson's critical distinction between intuition and intellect can be discerned, albeit not transparently, but the situation becomes more complicated when the notion of 'instinct' is introduced as a third intervening level of cognition, a notion that has brought about a good deal of misunderstanding in the literature (cf. Pilkington 1976, pp.186f.). According to Bergson, instinct and intellect bifurcate from a common denominator: the latter, it seems, does not transcend itself; whereas the former does, and, by virtue of mental evolution, its capacity leads

onto that of intuition. This overlapping triangulation stresses the evolutionary nature of intuition in the sense that its capacity 'emerges' as an inevitable outgrowth of instinct and, what is more, a possible transposition into reflection upon the object intuited. In Bergson's words: **"par *intuition* je veux dire l'instinct qui est devenu désintéressé, conscient de lui-même, capable de réfléchir sur son object et de l'élargir indéfiniment"** (Bergson 1907, p.178). Given the 'indefinite enlargement' of the object intuited as such, intuition can therefore transcend intellect with the practical mediation of intellect, but, without this practical mediation, intuition would remain in the form of instinct, constantly stagnated through the impractical mediation of intuition, and riveted to subjectivity rather than 'disinterestedness'. It now becomes evident that, within the evolutionary cycle of intuition, there is an ontologically necessary transition from one level of cognition to another ('intuition that cannot transcend instinct' and 'intuition that can transcend intellect'), the latter is qualitatively different from the former, even if the quantitative capacities of the two are symmetrically balanced. In both extremes, however, there exists a significant distinction based on whether or not either level can have direct access to 'immediate apprehension', perhaps because instinct, in and of itself, may not lead onto anything beyond 'immediate apprehension', a mental level which constitutes a central part of the interface between intuition and intellect as seen above. If this is indeed the case, then the distinction would exist between 'instinct that cannot transcend immediacy' and 'instinct that can transcend itself', the latter being 'disinterested', 'self-conscious', 'reflective', etc. (cf. Bergson's own words just cited). As a result, the distinction is no different in principle from that which exists between 'intuition that cannot transcend instinct' (henceforth '(-) intuition') and 'intuition that can transcend intellect' (henceforth '(+) intuition').

Returning to the logical assertion of (15), the mental cause of the individuation and nonprioritization of [(**KNE** and **AWT**) of Y] in (15b), it is stressed, relates to a mode of cogitation that is governed by a system of *immobile* cognition at a certain stage where Y cannot be produced. What establishes this system is, therefore, the capacity of '(-) intuition' rather than that of '(+) intuition', simply because the former is *detached*, but only at a certain stage, from the pragmatic requirements of intellect. In such a perspective, the mode of cogitation dictates that 'nonpropositional' [(**KNE** and **AWT**) of Y] may be a

necessary condition for, but is *not* congruent with, '(-) intuitive' (**KNE** and **AWT**) of the truth of propositions about Y, given the impracticalness, and therefore immediacy, of the latter. (That the two are congruent would imply that [(**KNE** and **AWT**) of Y] is *not* individuated from and nonprioritized to [(**KNE** and **AWT**) of X], which is absurd). More explicitly, the incongruence between the 'nonpropositional' and the '(-) intuitive' in this case means that '(-) intuitive' (**KNE** and **AWT**) of propositions about Y cannot be verified at a given stage for which reason the ability to express Y is absent at this stage. The absence of the ability to express Y is thus reducible to a mental state where the capacity of '(-) intuition' is *detached* from the demands of action as seen above, and subsequently enters 'sympathetically' into the gnosiological state of Y (the object intuited) in order to coincide with what is inexpressible about Y. In Bergson's words: **"Nous appelons ici [-] intuition *la sympathie* par laquelle on se transporte à l'intérieur d'un object pour concider avec ce qu'il a d'unique et par conséquent d'inexprimable"** (Bergson 1934, p.205). This coincidence with the inexpressible suggests that the capacity of '(-) intuition' must be *abstracted* from 'absolute certainty', a further mental state whose 'absoluteness' is pragmatically measured, and is thus attainable only in the practical capacity of intellect (i.e. it is attainable only when '(-) intuition' evolves into '(+) intuition'). As a consequence, attainment to 'absolute certainty' is in fact attainment to a mental state in which '(+) intuitive' (**KNE** and **AWT**) of propositions about Y can be verified at a later stage, leading to the expressibility, and therefore producibility, of Y (as in the case of the gnosiological state of X in (15b) whose mode of cogitation is governed by a system of *mobile* cognition).

Recall that '(+) intuition' (henceforth 'intuition') is a progressive faculty which necessitates a cogitative effort and can widen the **cognitive scope** of its object indefinitely. This indicates that the quantitative potential for this faculty, the **cognitive limits** of the object intuited in particular, cannot be fixed *a priori* (cf. 'nonsensory intuition' in (17b) for contrast). Now if Y in (15b) is an object intuited 'as it is in itself' at a certain stage without being reduced to a set of qualities that are conveniently classifiable, then the 'free' form of knowledge attained by intuition about Y, its **KNE** and its **AWT**, is not altogether 'inexpressible' in the philosophical sense of the term 'ineffable'. It is generally held that an object is ineffable (incommunicable, unsayable,

unutterable, etc.) when it refers to something, be it an actual or a possible fact, state of affairs, being, etc., for the expression of which there can be no suitable linguistic expressions.[25] On this account, the thing being talked about is sometimes called 'the ineffable in principle' and contrasted with 'the ineffable in practice', a quality of something that cannot be linguistically expressed for certain psychological reasons, but is in principle expressible. For instance, the **lexical meanings** of lexical items such as those cited in (5a), the avoided responses, cannot be seen as ineffable (in practice or in principle), simply because the same meanings are expressed in the substitutes in (5b), the instrumental responses (examples (5a–b) are repeated here in (18a–c) and (18a'–c') respectively). This is ascribable to the fact that, for experiencing the 'linguistic freedom' referred to earlier, language offers not only one lexical item which the learner finds less difficult/painful as in (18 a'–c'), but also a variety of distinct lexical items which can express the same meaning as in (19a–c):

(18) a. articulate (V) a'. say (V)
b. equilibrium (N) b'. balance (N)
c. capable (A) c'. able (A)

(19) a. state (V), utter (V), voice (V), etc.
b. equipoise (N), parity (N), symmetry (N), etc.
c. adept (A), competent (A), efficient (A), etc.

Correspondingly, the **pragmatic import** of grammatical rules such as the 'unreal' conditional in (6a), the avoided response, cannot be considered ineffable (in practice or in principle), given the expressibility of the same import in the substitute in (6b), the instrumental response (examples (6a–b) are repeated here in (20a–b) respectively). This, again, can be explained in terms of 'linguistic freedom' which makes available not only one structure for the learner who finds it less difficult/painful as in (20b), but also a variety of distinct structures for the expression of the same pragmatic import as in (21 a–f):

(20) a. If Ghiath was employed, his problems would be solved.
b. Ghiath's employment would solve his problems.

(21) a. Employing Ghiath would solve his problems.

b. Employment would solve Ghiath's problems.
c. Being employed would solve Ghiath's problems.
d. It is employment that would solve Ghiath's problems.
e. What would solve Ghiath's problems is employment/being employed.
f. Ghiath's problems would be solved by his employment/being employed.

It is, therefore, the **form** of a lexical item (cf. (18a–c)) or a grammatical rule (cf. (20a)), rather than its **meaning**, that can be regarded as ineffable in practice (but not in principle) due to the general psycholinguistic principle which determines the avoidance of this form (cf. (7a–c) in section 1). While the form of a lexical item, as we have seen, is reflected in the output of its morphophonological properties, the form of a grammatical rule is reflected in the output of its morphosyntactic properties. Still, however, the form of either structure, being the intuited object Y in (15b), is expressible (i.e. producible) in principle through the practical capacity of intellect. On this view, the quantitative capacities of the gnosiological states of X and Y, the instrumental structure and the avoided structure respectively, are symmetrically balanced, notwithstanding the qualitative difference between the two. The gnosiological state of Y, as discussed, is predetermined by intuition that is detached from intellect, for which reason Y cannot be manipulated for intentional purposes of action; whereas the gnosiological state of X necessitates the interaction between intuition and intellect, and thus X is activated for intentional purposes of action. In both cases, the quantitative capacities of **KNE** and **AWT** refer to those of the **linguistic** and **pragmatic** knowledge of either structure respectively, meaning that the L2 learner's linguistic and pragmatic knowledge of X is identical with his/her linguistic and pragmatic knowledge of Y. This symmetrical balance of quantitative capacities would emphasize, for both X and Y, the notion of **'perfect' receptive cognizance** referred to in the introduction (see also note 3) in that the L2 learner's receptive knowledge of X and Y is as 'perfect' as the receptive knowledge that a normal L1 acquirer would have of X and Y. In consequence, if the gnosiological states of X and Y differ, as they clearly do, then the qualitative difference just mentioned has to do with the difference in the **productive mode** of X and Y.

Given that Y is the avoided structure and the object of intuition,

'perfect' receptive cognizance of Y in the case of lexical items is self-explanatory in that the L2 learner, at the level of 'immediate apprehension', would receptively know the avoided lexical item (cf. (18a–c)), its morphophonological properties and its lexical meaning, whenever this item is produced (uttered or written) in any relevant context. In the case of grammatical rules, on the other hand, 'perfect' receptive cognizance of Y requires a closer investigation, since the L2 learner's receptive knowledge of the avoided grammatical rule (cf. (20a)), its morphosyntactic properties and its pragmatic import, is nothing to do with the possibility that he/she may *lack* knowledge of one, or more, of the lexical items that are incorporated in the structural output of this rule.

'Perfection', so understood, is established at the level of syntax and its directly related sublevel of morphology through the workings of a computational system for human language (CHL), yielding the output of the generated structure that converges at PF and LF. It is assumed, therefore, that 'imperfection' is expected in the formal part of the L1 lexicon (let alone the L2 lexicon), from which CHL maps an array of lexical selections onto a given structure in generating this structure (cf. Chomsky 1994, 1995; El-Marzouk 1995b). On this account, 'perfect' receptive cognizance of Y, the avoided structure of (20a), would reflect the L2 learner's receptive knowledge of all the principles that interact for the formation of Y and its pragmatic import, together with the correct values of the parameters fixed, even if, to reiterate, one, or more, of its lexical items do not exist in his/her mental lexicon. To clarify the point, consider the following examples:

(22) a. If John was *spruced up*, he would be admitted.
b. If that politician was not *volatile*, everything would be fine.

Suppose that examples such as (22a–b) happen to be produced (uttered or written) by an 'ideal' native speaker of English in any relevant context. We would then want to deduce that the L2 learner of English, the active avoider of (20a), would immediately recognize the structure that is generated for either sentence, its syntactic constituents and its pragmatic import, in exactly the same way he/she would recognize the structure of (20a), even if one, or more, of the lexical items of the former (say, *spruced up* in (22a) and *volatile* in (22b)) do not exist in his/her mental lexicon. That is, the L2 learner would

at least receptively know (and in some 'intuitive' way) that the *if*-clause [NP AUX AP] in both (22a) and (22b) is embedded in the main conditional clause [NP AUX AP] to express an 'unreal' event or situation (technical details aside), that [NP *he*] in (22a) is coindexed with [NP *John*] to establish an anapharic relation with it, that [NP *everything*] in (22b) is not coindexed with [NP *that politician*], and so forth. As such, the L2 learner's receptive knowledge of the 'unreal' conditional structure coincides with the receptive knowledge that a normal L1 acquirer would have of the same structure. This coincidence of receptive knowledge is nothing to do with whether or not the L2 learner's CHL has direct access to lexical items such as *spruced up* in (22a) and *volatile* in (22b), since the syntactic categories of these items can be processed within the whole structure at the level of 'immediate apprehension' with no reference to their lexical meanings (an indication of the priority of syntax in language processing over the interpretive domains of phonology and semantics). Even in the case of L1 acquisition, lexical access is not always available for CHL at the level of 'perfect' receptive cognizance due to the 'imperfection' that is expected in the formal part of the L1 lexicon, as seen. In other words, if our 'ideal' native speaker of English produced examples employing the 'unreal' conditional structure such as (23a–b) below, the normal L1 acquirer of English would immediately recognize this structure, its syntactic constituents, and its pragmatic import in exactly the same way he/she would recognize the structure of (22a–b), for instance, regardless of his/her lack of knowledge of one or more of the lexical items of the former (say, *titivated* in (23a) and *apatetic* and *copacetic* in (23b)).

(23) a. If John was *titivated*, he would be admitted.
b. If that politician was not *apatetic*, everything would be *copacetic*.

In summary, 'intuition' or **intuitive knowledge** is a direct relation between the learner's mind and the avoided L2 structure as perceived unambiguously, a relation that constitutes a mental process of knowing something 'as it is in itself', but whose cogitative nature cannot be viewed as a spontaneous flash of insight. This is contrasted with what is called 'intellect' or **intellectual knowledge**, a further mental process which helps manipulate the thing being talked about (its form, meaning, etc.) for intentional purposes of action. That is, the capacity of 'intellect' is *practical*, whereas the capacity of 'intui-

tion' is *impractical*. (Notice that I am not saying *theoretical*, since theoretical knowledge can be manipulated for intentional purposes of actions.)

To know an L2 structure intuitively is therefore to have *total* knowledge of the linguistic and pragmatic properties that are incorporated in that structure as an entity existing exclusively for its epistemological value. The temporary and necessary abstraction of this entity from the practical capacity of intellect may well explain why the context, which requires the use of that L2 structure, sparks off aversive difficulty/pain, and subsequently an avoidance trial. This is because the abstraction process as such is simply a mental dissociation of the learner's intuitive knowledge of the L2 structure from its 'absolute certainty', which is attainable only in intellect. Furthermore, 'absolute certainty', whose function is to verify intuitive knowledge via manipulating the object of this knowledge for intentional purposes of action, may also explain why the learners (if they did in fact perform avoidance in Schachter's data at least) tend to produce the L2 structure (i.e. the object of intuition) only when they are 'absolutely' sure of its nonerroneous reorganization or restructuring. If this is correct, then one would conclude that avoidance of an L2 structure occurs when intuitive knowledge of that structure is abstracted from anything contributed by intellect, simply because this abstraction would be the source of aversive difficulty/pain in the reorganization process. Conversely, aversive difficulty/pain, and therefore avoidance, would no longer be experienced when both intuition and intellect interact for the reorganization process; and, in such as case, the production trial cannot be taken as a reflection of the learner's 'linguistically masochistic' behaviour referred to in the previous section.

As mentioned above, the relation between intuition and the avoided L2 structure is to be seen as a sort of *total* knowledge existing exclusively for its epistemological value; *total* in the sense that the production trial, via the functioning of 'absolute certainty', unveils the linguistic and pragmatic representations of the structure with no erroneous manifestations from the L2 perspective. If, however, significantly frequent production trials reveal incorrect manifestations, then intuition of the structure is simply a sort of *partial* knowledge (cf. note 25), and thus the subsequent 'nonproduction' trials cannot be ascribed to avoidance.

3 Critique of an 'avoidance classic'

Having identified the general psycholinguistic principle that determines avoidance phenomena in the process of L2 acquisition (cf. section 1; item (7)), it now becomes clear that this principle is directly apposite to the expected difficulty/pain that the learner would experience in language production over the formal output of a particular L2 structure (i.e. the morphophonological properties in the case of lexical categories or the morphosyntactic properties in the case of grammatical rules). The expected difficulty/pain can, in turn, be ascribed to the radical crosslinguistic variation in that structure between L1 and L2, the learner's L1 and the L2 he/she is learning. Moreover, this expectancy of difficult/painful reorganization entails the absolute *absence* of the aversive context, which requires the use of the avoided L2 structure on the one hand, and the *totality* of the active avoider's 'intuitive' knowledge of its linguistic and pragmatic properties in the sense discussed in the preceding section on the other. Because this totality of 'intuitive' knowledge is governed by a system of stagnant cognition, its impracticality will not guarantee the active avoider's full control over the extemporaneous activation of the structure at a given stage of language development. Even in the case of radical crosslinguistic variation between L1 and L2, the difficulty/pain predicted on the basis of such variation can hardly be correlated with avoidance *a priori* for reasons which have to do with the learner's affective attitude towards the structure. So it can be seen that avoidance of a given L2 structure is generally conditioned by three essential stipulations as adumbrated in (24a–c) below. These stipulations are interrelated and integrated into a 'tripartite' criterion that cannot dispense with any of them. That is, failure to meet one and only one of these stipulations may associate the whole phenomenon with one or more factors that do underlie the process of L2 acquisition but have nothing to do with avoidance.

(24) a. **The psychological stipulation**
For the occurrence of avoidance in L2 acquisition the aversive context which requires the use of the avoided L2 structure must be absent; it is simply expected so that production of that structure will be averted.

b. **The epistemological stipulation**
For the occurrence of avoidance in L2 acquisition the learner's 'intuitive' knowledge of the avoided L2 structure must be character-

ized by a total nature but abstracted from 'intellectual' knowledge at a given stage of learning.

c **The teleological stipulation**
For the occurrence of avoidance in L2 acquisition a particular purpose must be fulfilled in the course of learning but can hardly be correlated *a priori* with the difficulty/pain predicted on the basis of L1–L2 variation.

Let us now reconsider Kleinmann's account of the passive construction, for instance, in the light of these three stipulations. It should be noted that discussion of the passive construction here is fundamentally applicable to every construction that has so far been dealt with in the so-called literature of 'avoidance research'. On the basis of a contrastive analysis (CA) of the passive construction in L1 Arabic and L2 English, Kleinmann predicted that the Arabic-speaking learners of English would experience difficulty with this construction. The assumption that seems to have been made *a priori* was that, through the learners' exposure to an indirect preference assessment task, such difficulty would manifest itself in avoidance which "could not be attributed to a lack of knowledge" (Kleinmann 1977, p.367). For him, the presence of knowledge of the passive construction was initially established by means of comprehension testing (a multiple choice test) coupled with measurements of affective variables such as *confidence* (cf. the notion of 'absolute certainty' referred to in the preceding section), *anxiety*, and *motivation*. Then, within the indirect preference assessment task, the learners were presented with four pictures which were designed for the elicitation of the passive construction. All these linguistic, psychological and contextual procedures were thus administered in order to show that avoidance trials were predictable, and that production trials were conditioned by the affective variables just mentioned.

So far as the **psychological stipulation** in (24a) is concerned, the critical distinction between escape and avoidance is explicable in terms of the distinction between the presence and the absence of the aversive stimulus (i.e. the aversive context) respectively, as illustrated in section 1. At one extreme, escape conditioning suggests that the aversive stimulus has actually occurred some time before the individual's entertainment of the thought of producing the instrumental response in order to terminate the natural response (cf. (8a)). At an-

other, avoidance conditioning implies that the aversive stimulus has not yet occurred, but rather it is 'scheduled' to occur some time in the future (cf. (1a)), and thus production of the instrumental response averts the natural response (i.e. delays rather than prevents the avoided L2 structure). Now, if one believes that the learners in Kleinmann's data experienced difficulty with the passive construction of which they did not lack knowledge, then their exposure to four pictures for the elicitation of this construction would certainly render the aversive context which requires its use *present*, a defining conditioning that is pertinent to escape but not to avoidance as we have just seen.[26] This crucial point, which has been entirely overlooked since the publication of Schachter's original work, indicates nothing but the researchers' utter ignorance of the important distinction between escape and avoidance. It should be noted, however, that, apart from the epistemologial and teleological stipulations in (24 b–c), Schachter's experimental objective would have come close to the truth, had she managed to administer entirely unconstrained elicitation tasks such as *free* composition or conversation. But investigation into avoidance of the relative clause construction was not her initial intention anyway, as she herself was primarily concerned with how the learners' L1s varied in this construction and how such variations influenced their interlanguages (ILs) (cf. Kamimoto *et al.* 1992, p.257).

With regard to the **epistemological stipulation** in (24b), Kleinmann's main objective was to demonstrate that avoidance trials "which could not be attributed to a lack of knowledge" were predictable, and that production trials were determined by the affective variables referred to above. This in principle does not seem to constitute a conceptual deviation from the general definition of the 'avoidance-production' dichotomy, if it is permitted to disregard at least the psychological stipulation (24a) just discussed. On this account, if the learners in question did prove total comprehension of the English passive construction (i.e. the so-called 'avoided' L2 structure), then total knowledge of such a construction (in the sense intended in the preceding section) would occupy their 'intuitive' mind as an impractical entity existing exclusively for its epistemological value. 'Intuitive' knowledge of the passive construction in its ontological totality would, for that reason, exist in a form that may be described by the linguist explicitly as in Figure 1. Notice that this figure includes the two ma-

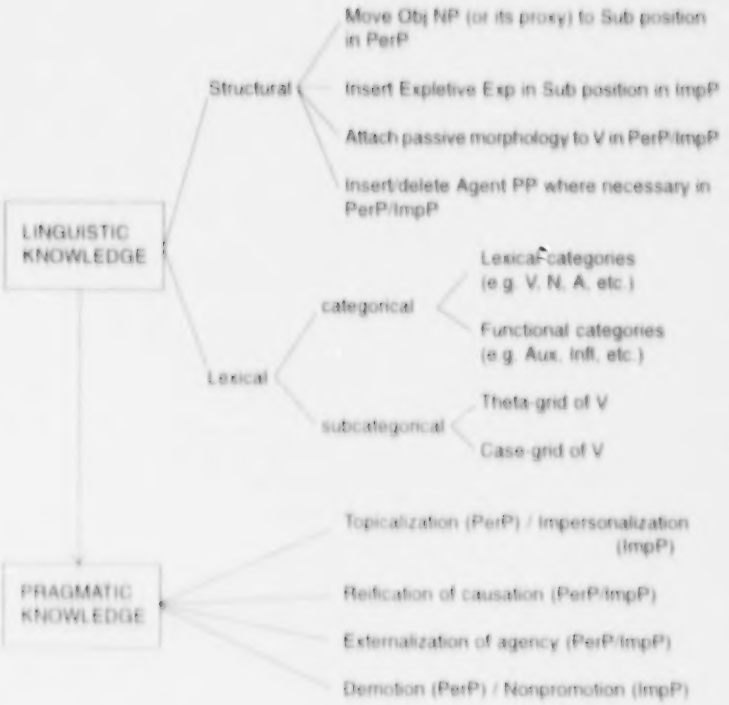
LINGUISTIC KNOWLEDGE
Structural
Move Obj NP (or its proxy) to Sub position in PerP
Insert Expletive Exp in Sub position in ImpP
Attach passive morphology to V in PerP/ImpP
Insert/delete Agent PP where necessary in PerP/ImpP
Lexical
categorical
Lexical categories (e.g. V, N, A, etc.)
Functional categories (e.g. Aux, Infl, etc.)
subcategorical
Theta-grid of V
Case-grid of V
PRAGMATIC KNOWLEDGE
Topicalization (PerP) / Impersonalization (ImpP)
Reification of causation (PerP/ImpP)
Externalization of agency (PerP/ImpP)
Demotion (PerP) / Nonpromotion (ImpP)

Figure 1
An explicit description of intuitive knowledge of the canonical passive construction

jor types of the canonical passive construction, viz. the so-called 'personal passive' (**PerP**) and the so-called 'impersonal passive' (**ImpP**).

Recall that the learner's 'perfect' receptive cognizance of the avoided L2 structure refers to his/her native-like receptive knowledge of the linguistic and pragmatic properties of that structure, regardless of the possibility that he/she may lack knowledge of one, or more, of its lexical items (cf. section 2, examples (22a–b) and (23a–b); see also note 3). Accordingly, the learners in Kleinmann's data would,

at least at a reception level, recognize all the linguistic units together with their pragmatic properties, that make up the structural output of any natural instance of the canonical passive construction. For example:

(25) A redhead was hit in the big top.

If an instance of the so-called personal passive such as (25) is uttered or written by an 'ideal' native speaker of English, then the learners in question would 'intuitively' know that *was hit* is a passive verb portraying a certain action rather than a condition or a state, that *redhead* is the entity which undergoes the action expressed by the verb (i.e. the Patient), that *big top* is the place where the action expressed by the verb is situated (i.e. the Location) and so forth, even if one or more of its lexical items (say, *redhead* and/or *big top*) do not exist in their mental lexicon. The learners therefore would have 'intuitive' knowledge of all the general principles which underlie canonical-passive formation and its pragmatic import, together with the correct values of the particular parameters fixed.

However, Kleinmann's limited method of comprehension testing indicates nothing but the learners' elicited L2 responses to a limited set of stimuli, since he employed only four pictures for the personal passive, a number that is insufficient for demonstrating the learners' 'perfect' receptive cognizance but sufficient to constitute the *presence* of the aversive context as seen in the discussion of the psychological stipulation (24a). Apart from the presence of the aversive context, such stimuli may well at the same time elicit L1 responses *internally* as filtering devices, given the establishment and simplification of most crosslinguistic similarities between L1 and L2 in the comprehension process. Although the elicitation task was 'successful' in terms of the method conducted, comprehension of the canonical passive construction within these limitations could in no way illuminate the learners' 'intuitive' knowledge of this construction (cf. Figure 1), if it really existed exclusively for its epistemological value. After all, the relatively highly frequency of erroneous production trials (Kleinmann himself reported that 76% of the trials were erroneous (Kleinmann 1977, p.370)) is proof enough that *total* knowledge in the sense discussed in the preceding section did not exist. Consequently, *partial* knowledge of the canonical passive construction cannot be taken as a prerequisite for detecting avoidance.

In respect of the **teleological stipulation** in (24c), we have not seen so far an 'avoidance scholar' underpinning the specific learning purpose of avoidance in his/her 'findings'. The only thing that we can see in this context is the *a priori* correlation between avoidance and the CA-predictability of learning difficulty, a further serious problem that Kleinmann's study is fraught with. How could an 'avoidance scholar' make possible such a correlation with no empirical (i.e. *a posteriori*) notion of its 'repercussions'? (Schachter herself did not address this issue at first; she 'discovered' it only later (cf. Kamimoto *et al.* 1992, p.257)). Although it is possible to predict learning difficulty on the basis of parametric variation between L1 and L2, it is extremely difficult, if not impossible, to initially establish whether such difficulty would lead to avoidance or to error-making. Thus to account for the *already predicted* difficulty in terms of avoidance could only imply that every instance of the canonical passive construction in L1 Arabic, for example, functions as a corresponding instance of the same construction in L2 English, and vice versa. For such implication it is not hard to extrapolate a warping streak of fortuitous confirmation: *the learners avoided the structure whenever they perceived L1–L2 crosslinguistic variation via an internal CA!* (meaning that, for every avoidance trial, there is always a pair of L1–L2 passives to be perceived by the active avoider as radically different!) If this contention were true, then the L1 passive would provide the formal input to what Chomsky (1986, p.87) terms 'canonical structural realization' (CSR), a process whereby the theta-arguments of V (cf. (26) below) or the derived N (cf. (27) below), in the L1 are to be semantically selected and canonically realized as a specific set of NP- (being syntactic categories) in the L2. For example:

(26) a. turjima al-kitaabu. (L1 MSA)
(Gloss: was translated (3MS) the-book (NOM))
b. The book was translated. (L2 English)

(27) a. tarjamatu al-kitaabi ... (L1 MSA)
(Gloss: translation (NOM) the-book (GEN))
b. The translation of the book ... (L2 English)

Thus, a Patient-argument, as illustrated in these examples, is to be s-selected and c-realized as an NP in the L2 (*the book* in (26b) and (27b)) because it is already s-selected and c-realized as an NP in the

L1 (*al-kita:bu* in (26a) and *al-kita:bi* in (27a)). As a result, both L1 and L2 would involve the same principles and parameters shown in Figure 1, but L1–L2 crosslinguistic variation would arise from the way such principles and parameters interact for passive-formation in either language, hence the difficulty/pain and, subsequently, the avoidance trials. This analysis, however, may well be relevant but only to the Arabic canonical passives that do in fact function as corresponding canonical passives in English, given the learners' 'intuitive' knowledge of the latter construction (cf. (24b)) as well as the absence of the aversive context which requires its use (cf. (24a)). But what about those Arabic passives that do not function as corresponding passives in English on the one hand, and those English passives that do not function as corresponding passives in Arabic on the other? The answer to this question would be far from satisfactory without considering the potential frequency differences in this construction between L1 and L2.

It is assumed that Kleinmann based his contrastive analysis on the written variety of the L1 (Classical Arabic/MSA) since the canonical passive that occurs in this variety (e.g. qutila *'was killed (3MS)'*)

Version	(A) Total of passives in Arabic	(B) Total of passives in English	(C) Passives in Arabic & English	(D) Passives in Arabic only	(E) Passives in English only
N.J. Dawood (1956/90)	531	911	414	117	497
A.J Arberry (1964/90)	531	929	463	68	466
A.Y. Ali (1934/46)	531	920	437	94 app. 18%	483 app. 52%

Table 1
Frequency of canonical passives in the first nineteen chapters of the Koran and three English versions

is normally replaced by the morphologically marked reflexive in Colloquial Arabic (e.g. inqatal *vs.* qutila). In order to investigate the frequency differences in the canonical passive between Classical Arabic and English (Classical and Contemporary), a method similar to that of Zhao (1989, p.107) (cited in Kamimoto *et al.* (1992, p.269)) was conducted, except that different measures, which are of particular importance in the present study, were taken. As a standard example of Classical Arabic, the Koran was chosen, and all the canonical passives that recur in the first nineteen chapters (or suras) were counted. Then, the same nineteen chapters of each of three respected English versions were examined along five paradigms as illustrated in Table 1.

As just mentioned, for the Classical Arabic of the Koran the language of the three English versions covers two diachronic dimensions of English: both Ali (1934/46) and Arberry (1964/90) use Classical English (mainly the English of the sixteenth and seventeenth centuries), whereas Dawood (1956/90) employs Contemporary English (mainly present-day literary English). The choice of these English versions was determined by the L1s of their writers: Dawood (1956/90) is an Arabic-speaking scholar (L1 Arabic and L2 English), Arberry (1964/90) is an English-speaking scholar (L1 English and L2 Arabic), and Ali (1934/46) is a Hindi-speaking scholar (L1 Hindi, L2 Arabic, and L3 English). Notice that, apart from the morphological variation across Arabic and English (synthetic *vs.* analytic, respectively), the canonical passives of paradigms A and B are only those which satisfy the principles and parameters shown in Figure 1.

As Table 1 illustrates, the striking difference between paradigms A and B indicates that approximately 18% of the Arabic passives do not function as corresponding passives in English (paradigm D), and that approximately 52% of the English passives do not function as corresponding passives in Arabic (paradigm E). This difference alone would account for the Arabic-speaking learners' underproduction trials at the English passive in Kleinmann's data. Moreover, the extremely pervasive nonagentive nature of the passives in Arabic (approximately 95%)[27] tends to minimize considerably the pragmafunctional divergence across certain L1 actives and L2 agentive passives, since the nonagentive nature of the passives in English is less pervasive (approximately 85%). This means that there exist in Arabic certain actives which play their pragmafunctional roles in much the same way certain agentive passives in English do. Surprisingly, all the Eng-

lish passives reported by Kleinmann are agentive (cf. Kleinmann 1978) and would be far more natural when rendered as actives in Arabic due to the 'instrumental' insertion of the Agent-PP in the former. For example:

(28) The man was killed ***by the woman***.

If an English agentive passive such as (28), being one of Kleinmann's examples of the personal passive, is to be rendered as a canonical passive in Arabic, it would be extremely difficult, if not impossible, to retain the Agent-PP 'instrumentally' due to the structural and logical principles which underlie canonical-passive formation in Arabic. For example:

(29) a. qutila al-rajulu ...
(Gloss: was killed (3MS) the-man (NOM)...)
b. The man was killed...

As a consequence, the pragmafunctional role of the Arabic passive in (29a) will be radically different from that of the English passive in (28), simply because the term *al-majhu:l* (roughly *'the passive'*) in Arabic implies the unknownness of the Agent (i.e. the doer of the action), for which reason the term literally means *'the unknown'* (see also note 27). Therefore, in Arabic passives such as (29a), the Agent-PP is necessarily deleted (i.e. both syntactic and phonological deletion), whereas it seems to be necessarily inserted in English passives such as (28), if it is indeed a natural instance of the canonical passive construction. But in any event, to render the English passive (28) with its pragmafunctional properties into Arabic, the Patient-NP in the corresponding construction should be topicalized and directly followed by an active clause. For example:

(30) a. al-rajulu qatalat-hu al-mar?atu.
(Gloss: the-man (NOM) killed (3FS)-him the-woman (NOM))
b. The man, the woman killed him.

The interesting result would be that the English agentive passive (28) and the Arabic 'patientive' active (30) would coincide pragmafunctionally, simply because the Patient-NP *al-rajulu 'the man'* is topicalized in both structures. More interestingly, a recurrent L1 structure such as (30) (recurrent both in MSA and Colloquial Arabic) may well explain why one of Kleinmann's informants responded with an active

after a pause intervening between it and a topicalized Patient-NP (cf. Kleinmann 1977, pp.372f.). For example:

(31) *The woman* [PAUSE] *The car hit the woman.*

Apart from the topicalization of the Patient-NP, an actual IL-utterance such as (31) clearly indicates that the learners in Kleinmann's data were not avoiding production of the English passives, but rather transferring in one way or another the more natural activeness of the Arabic counterparts, a very different matter. This type of transfer is ascribable to the significantly low level of frequency overlap between L1–L2 passiveness (cf. paradigm C in Table 1), which can act as a 'reinforcing' trigger for L1 influence. In other words, the L1 passives that are pragmafuntionally equivalent to the L2 passives are not available for the learners to perceive L1–L2 crosslinguistic variation as one possible precondition for the avoidance trials.

Finally, Table 1 demonstrates that Classical Arabic makes far less use of the canonical passive construction than English (Classical or Contemporary) does, even though the Koran, with its typical embodiment of **impersonal** style, incorporates a comparatively high percentage of instances of this construction. That is, if the same method were to be conducted on any other book written in Classical Arabic or MSA and translated into Classical or Contemporary English (or vice versa), the frequency differences in the canonical passive construction between L1 and L2 would be far more striking than those illustrated in Table 1. However, this does not imply that the Arabic passive in general forms a 'universal' subset of the English passive; the logical basis of passivization in Arabic can be symbolized in several ways and thus expressed via several structurally distinct devices, which are beyond the scope of this study.

4 Conclusion

We have seen from every possible angle that the results of Kleinmann's 'experimental findings' are both misleading and contradictory due to a poor understanding of the phenomenon of avoidance as initially defined by the behaviourists. Even Schachter, the so-called 'first avoidance scholar', came a cropper in her attempt to restore the locus of CA *a priori*. It is clear that neither Schachter nor

Kleinmann nor any other 'avoidance scholar' was aware of the three essential stipulations for the occurrence of avoidance in the process of L2 acquisition (the psychological, the epistemological, and the teleological), since none of these researchers attempted to explain the learner's intuitive knowledge of the avoided lexical items or grammatical rules in any perceivable way. Hence, the implication of delay, as discussed in section 1, should be underlined as a starting point, otherwise our inquiry about avoidance in L2 acquisition research will go awry. This is because delay, being the ultimate mechanism underlying the avoidance of a given L2 structure, presupposes the absolute absence of the aversive context which requires the use of this structure (the psychological stipulation) on the one hand, and some sort of knowledge of its linguistic and pragmatic properties (the epistemologial stipulation) on the other. Accordingly, investigation into this sort of knowledge, its ontological nature in particular, would no doubt illuminate the developmental reason for the occurrence of avoidance (the teleological stipulation). The ontological necessity in the sense intended in section 2 is self-explanatory as there can be no avoidance without having some sort of knowledge of the avoided L2 structure, knowledge which is easy to pinpoint but difficult to describe. Thus, through a careful scrutiny into the thesis of 'motivation by pleasant thoughts' (a thesis put forward within the framework of psychological hedonism), an attempt was made to identify this knowledge in terms of Bergson's notion of 'intuition' as opposed to his notion of 'intellect', the former being one of the necessary conditions specified by some early phenomenologists. 'Intuition', so understood, is characterized by a cogitative nature, a reflective force that cannot be equated with a spontaneous flash of insight, but whose mode of 'thinking' is **static** because it enters into what it knows in order to coincide with what is **inexpressible** about it, meaning that the capacity of 'intuition' is detached from the demands of action (i.e. 'intellect'). 'Intuitive' knowledge of the avoided L2 structure is therefore a total knowledge of this structure, a knowledge that is governed by a system of stagnant cognition and impracticalized at a given stage where the workings of 'intellect' are psychologically blocked. It is something like the L1 speaker's full knowledge of taboo words which are avoided under obvious social constraint, but whose direct use can be called upon, especially when they are felt to be most 'expressive' in certain contexts. Figures of speech such as metaphors,

metonymies, similes, etc. (including analogies and comparisons in everyday speech) suggest nothing else than what is avoided knowingly or what cannot be expressed unknowingly.

Notes

1. The idea of this study was expressed rather sketchily in a paper delivered to an international conference organized in June 1994 by the Irish Association for Applied Linguistics and published a year later (cf. El-Marzouk 1995a). I wish to thank Dr. David Singleton, whose encouragement and constructive criticism contributed greatly to the completion of this work. Special thanks are also due to Professor David Little for patiently editing the manuscript. All remaining shortcomings are my own.

2. In his so-called 'standard book' *Contrastive Analysis* (1980), James thinks with confidence that the strategies 'explored' by Schachter (1974) and subsequently by Kleinmann (1977, 1978) are indeed 'avoidance strategies'. On this understanding, James identifies 'avoidance phenomena' as indications of what he calls 'ignorance without interference'. James has coined this phrase as one of two paradigms (the other being 'interference without ignorance') to demonstrate what he seems to have in mind, an undesirable inconsistency which the Newmark-Reibel Hypothesis (1968) is fraught with, viz. **ignorance reduces to interference** (James 1980, p.22). To be sure, if one does not call into question its plain idleness, a phrase like 'ignorance without interference' can only be taken as an appropriate description of such *mistakenly* christened phenomena as 'semantic avoidance' and 'topic avoidance'. These phenomena refer to the learner's lack of knowledge of certain lexical items (i.e. his/her ignorance), and therefore to his/her concomitant nonuse of these lexical items (cf. Tarone *et al.* 1976; cited in Kleinmann 1977; 1978). Anyway, James's 'standard book' contains a series of further misinterpretations, but I will not discuss them here.

3. Attainment to 'perfect' receptive cognizance of a given L2 structure indicates here the learner's possession of receptive knowledge of all the principles and parameters that interact for the formation of that structure and its pragmatic import, regardless of his/her lack of knowledge of one, or more, of its lexical items. The learner's receptive knowledge in this sense would, at least at a comprehension level, be identical to the receptive knowledge that a native speaker of the L2 would possess of the same structure (cf. examples (22a–b) and (23a–b) in section 2; example (25) in section 3).

4. According to Avicenna, the evolutionary cycle of the mind (or the 'ra-

tional' spirit in his terminology) begins with its lower forces (i.e. organic matter) and ends in its higher forces such as perception. Within his theory of perception, Avicenna makes a clear distinction between 'practical knowledge', by means of which conscious choice of action is made (cf. Descartes' notion of 'voluntary actions'), and 'theoretical knowledge', which consists in the attainment of *intelligibles* from active intelligence. Within a detailed construal of these intelligibles, Avicenna makes a further distinction between 'primary intelligibles' and 'secondary intelligibles'. While 'primary intelligibles' (e.g. self-evident logical truths) are attained directly, that is, without the intervention of the mind's preparatory activities on the **sensory level**; 'secondary intelligibles' (e.g. concepts and logical inferences) normally require preparatory activities involving the external and internal senses such as sensation, memory, imagination, estimation, and cogitation (or 'imaged thinking') (cf. Edwards 1972, vol. I, p.228).

5. In this sense, Hobbes does not seem to be an 'empiricist' as some commentators would wish to call him, but rather an advocate of 'deterministic materialism', a doctrine which holds that the organic changes within the body (being determined by matter in motion) determine the way sense-perception proceeds; sense-perception, in turn, determines the way 'ratiocination' proceeds. As for the first issue (i.e. the contents of the mind), Hobbes makes a distinction between 'experimental knowledge' (knowledge acquired by the senses) and 'ratiocinative knowledge' (knowledge acquired by reason), the latter consisting in 'composition' (or 'synthesis') and 'resolution' (or 'analysis'). In the former, however, sensory images (i.e. events outside the perceiver) are formulated inside the perceiver by means of motions: some of these images become associated in the perceiver's mind when they recur in the same order. It is this recurrence in terms of which Hobbes identifies a wider notion of 'experience', whose pragmatic significance is not to be denied (cf. Woodhouse 1988, p.33).

6. The idea of hedonism in terms of which Hobbes identifies 'the workings of the mind' has in fact a very long history dating back to sources such as Epicurus (341 B.C. – 270 B.C.), of whom the third-century writer Diogenes Laertius said that "as proof that pleasure is the end he adduces the fact that living things [animals and humans], so soon as they are born, are well content with pleasure and are at enmity with pain" (quoted in Edwards 1972, Vol. III, p.433).

7. It is worth noting here that the form of 'materialism' developed by seventeenth-century philosophers such as Hobbes (see also note 5) is considered one variant of 'mechanistic materialism', and therefore a histori-

cal-conceptual link between two other main forms: first, the so-called doctrine of 'naive materialism' whose rationale was enunciated within the framework of 'atomism', a doctrine, including the famous doctrine of the four elements, that holds that since 'material reality' is nothing but a complex or complexes of simple and unchangeable particles (i.e. atoms), all *changes* are reducible to changes in the configuration of these particles; and second, 'dialectical materialism', a term probably first used by Plekhanov (1856–1918), which attempted to apply Hegel's (1770–1831) dialectics (or dialectical methods) to a 'material' rather than 'spiritual' reality (see, for example, Jordan 1967). It is therefore the latter form (dialectical materialism) with which Pavlov's reflex theory of behaviour accorded considerably.

8. This refers to the theory of 'reinforcement' which, as Chomsky restates (Quine 1960, pp.82f.), implies that the sole purpose of this procedure may be to avail the relevant data about the 'correct usage' of a given item or rule for the L1-acquirer. Chomsky points out that the empirical claim of this theory "will be that learning of language cannot proceed in the absence of data". However, he strongly asserts that Skinner's notion of 'reinforcement' is still more unsatisfactory than such an empirical claim because Skinner "does not even require that the 'reinforcing stimulus' impinge on the responding organism" (Chomsky 1965, p.204). Confusion about this question makes it necessary to mention some countercriticism levelled at Chomsky's position recently. Richelle argues that Chomsky concentrated on a 'stimulus-response model' and 'drive reduction', for example, that had nothing to do with Skinner's functional approach to verbal behaviour. To support this caveat, Richelle quotes a report made by Skinner where he himself denied that he was a stimulus-response psychologist (cf. Richelle 1993, pp.121f.). Whether or not Chomsky was correct in every point of criticism he made against Skinner, or whether or not Skinner was in fact a stimulus-response psychologist, does not really matter in this particular context. What matters is the fact that the process of language learning (L1 acquisition or L2 acquisition) cannot be explained exclusively in terms of stimulus-response associations, simply because not all the data relevant for speech processing are present in observable behaviour, a seemingly crucial point that was emphasized by Chomsky. Thus, what the individual (the L1 acquirer or the L2 acquirer) learns is not a set of utterances by means of these associations, but a set of rules (of whatever sort) for processing utterances. Yet, this does not imply that 'reinforcing' exposure to the relevant data is not at all necessary for speech processing, since this 'reinforcement' may well mediate the individual's application of the available 'inductive principles' to the experience that is preliminarily analysed by

the peripheral processing mechanisms (see also Chomsky 1965, pp.47f.; 1972, pp.192f.).

9. Some psychologists make a critical distinction between avoidance behaviour and punishment behaviour, even though both involve reducing exposure to an aversive stimulus. Avoidance behaviour, as we have seen, is known as **active avoidance** because a specific action is *taken* for this reduction, whereas punishment behaviour implies that *refraining* from that action minimizes contact with the aversive stimulus, for which reason the latter is sometimes referred to as **passive avoidance** (cf. Domjan and Burkhard 1993, p.261). The aim of this study is, therefore, to investigate active avoidance, and not passive avoidance.

10. The term 'context' is still used in such a loose way in current linguistic thinking since it "can be the whole world in relation to an utterance act" (Pinkal 1985, p.36; quoted in Quasthoff 1994, p.773). Because of the deep-seated problems of description that arise from this fact, no existing theory would be able to offer sufficient answers to the questions that are directly related to 'context' such as the selection of elements (physical, verbal, episodic, semantic, etc.) relevant for what turns out to be 'context', the arrangement of the necessary 'contextual units', the 'dynamic' and 'interactive' establishment of these units, and so forth. To avoid this confusion in the present study, the term 'context' will be restricted to its 'structure-bound' connotations in the sense that the L2 structure (as identified in (4a)) is bound to the pragmafunctional level when produced as, or within, a single linguistic unit act (or device).

11. Under the generalized term 'structure' (in the use of 'L2 structure' throughout) I am sometimes forced to employ the traditionally picturesque term 'grammatical rule' for an illustrative description of syntactic constructions such as the 'unreal' conditional construction (cf. (6a)) and the passive construction (cf. section 3), even if these constructions may in the end appear as merely 'taxonomic artifacts'. As far as is known in the most recent versions of the Principles-and-Parameters approach to the theory of grammar (namely, the Economy Model (Chomsky 1988) and the Minimalist Programme and its extension (Chomsky 1992, 1994)), the emphasis has radically shifted away from the investigation of the specific 'grammatical rules' which describe particular syntactic phenomena in the wide range of natural languages (descriptive adequacy) to an investigation of the universal (or general) principles that interact to explain such phenomena (explanatory adequacy). This is to demonstrate that "the apparent richness and diversity of linguistic phenomena is illusory and epiphenomenal, the result of interaction of fixed principles under slightly varying conditions" (Chomsky 1994, p.4). However, inas-

much as the 'tension' between these two directions is still persistent, we cannot entirely dispense with a term like 'grammatical rule', since we are not dealing with the derivational aspects of the L2 structure identified in (4a), but with an array of levels and sublevels of representation which yield its outputs.

12. According to Schachter, this procedure would be described as a reflection of 'phonological avoidance' whose occurrence in L2 acquisition would be 'difficult, if not impossible'. On the basis of mere speculation, she went on to justify her position: "Imagine a student who has trouble making the *th* sounds in English trying to avoid using words that contain them by substituting other words with the same meaning but without the *th* sounds. What happens in fact is that the student is forced to use the words and therefore to make errors in the production of the sounds" (Schachter 1974, p.361). What she seems to have in mind is the unavailability of 'phonologial avoidance' in the acquisition of English words (of whatever class) containing sounds the learner finds difficult to articulate such as /θ/ and /ð/, while in fact these words can only be understood as belonging to a **closed class** of functional categories such as Det-elements (articles and demonstratives), categories that do not assign lexical meanings, and therefore do not permit the learner access to other alternatives for the 'substitution' process. Yet, even in the acquisition of Det-elements, it could be argued that the learner who *resides* in Ireland, for example, and still expects difficulty with the English sounds /θ/ and /ð/ may well have recourse to the alternatives that occur in some regional dialects of Hiberno-English, viz. /t/ and /d/ respectively. Whether or not this argument lends credence to the first generalized linguistic level (the morphophonological) is not to be addressed in the current study: by lexical items we mean those which belong to the **open class** of lexical categories such as N, V, and A, where lexical selection is well accessible to the learner (e.g. *'therapy* vs. *cure'*, *'threaten* vs. *warn'*, etc.). But the more blatant feebleness of Schachter's speculation stems from her surreptitious confusion of the cause or causes of 'phonological avoidance' with its consequence or consequences, as two types in contradistinction to each other are perceivable (if we may also speculate): at one extreme, avoidance that may result in the nonuse of a lexical item like *therapy* and the concomitant **partial** change of its underlying lexical form (e.g. *terapy*); at another, avoidance that may result in the nonuse of the same lexical item and the concomitant **total** change of its underlying lexical form (e.g. *cure, remedy*, etc.). The morphophonological level put forward in this study is closely related to the latter, but not the former, since variation in the output is, in this case, essentially explicable in terms of morphology and phonology (cf. Chomsky 1994, 1995).

13. These examples were observed in completely naturalistic settings and reported as part of the empirical research conducted at DCU in 1990–91. The informants were Syrian learners of English who were studying for Ph.D.s in mechanical engineering. Although these learners had full knowledge of words such as *articulate* (V), *equilibrium* (N), and *capable* (A), knowledge that can be perceived from their long residence in Dublin, they tended to avoid them in extemporaneous speech in examples such as (i–iii). (notice that *ionic equilibrium* and *kinetic equilibrium* are technical terms used in chemistry and physics respectively.)

    i. ? He *said* his words carefully.
    [It would be far more acceptable with *articulated*]

    ii. *ionic *balance*/kinetic *balance*
    [Not possible in their scientific contexts]

    iii. * My supervisor is *able* of most things.
    [grammatical with *capable* but not *able*]

    Moreover, examples such as (iv) rather than (v) below seem to be typical of Arabic-speaking learners of English in general, even though both structures occur interchangeably in L1, including the incorporation of the passive in (v):

    iv. X's employment (or employment of X) would solve his/her problems.

    v. If X was employed his/her problems would be solved.

14. The lexical properties of a lexical item such as *capable* require a representation of the syntactic category PP where the object of the preposition *of* instantiates any of the following three subcategories: (i) a nonderived nominal (e.g. *He is capable of maths*); (ii) a derived nominal (e.g. *He is capable of translation*); and (iii) a derived gerundive (e.g. *He is capable of writing*). On the other hand, the lexical properties of a lexical item such as *able* only involve the representation of a simple infinitival construction when this lexical item occurs in the same predicative position (e.g. *He is able to do maths, He is able to translate, He is able to write*, etc.).

15. Within the framework of Skinnerian behaviourism, psychologists underline the fact that all liberation movements and revolutions (social, political, religious, etc.) that appeared in numerous parts of the world throughout history are in principle forms of escape behaviour. This is due to the continuous existence of the aversive circumstances against which human beings 'instrumentally' revolted to satisfy the occurrence of the instrumental responses for the termination of such circumstances. For instance, the exploitation of one social class by another, the enforce-

ment of a preplanned law by institutionalized power to suppress rights or apply fines or deprive of employment, and the like (see, for example, Richelle 1993, p.204).

16. On the basis of her contention that "the avoidance phenomenon does not occur in the acquisition of the phonological subcomponent" (see also note 12), Schachter believes that only in the syntactic subcomponent is the possibility of paraphrase available, whereby "the student can take advantage of paraphrase relations to avoid constructions he finds difficult, while still getting his idea across" (Schachter 1974, p.361). Here, again, we are led to the same confusion of the cause or causes of avoidance with its consequence or consequences. Of course, the possibility of paraphrase does not exist in phonology as an end in itself, but this is not what the avoidance phenomenon is all about. If the syntax that is the main cause of avoiding a *grammatical rule* would permit access to 'syntactic paraphrase', then the phonology that is the main cause of avoiding a *lexical item* would also permit access to 'phonologial paraphrase'. As is well-known in linguistics, the term 'paraphrase' is used to refer to the **consequence** of production whereby a sentence, for example, may have alternative versions but revolving around a *single* semantic axis even if they may differ in logical aspects such as 'focus' and/or 'presupposition' (not to mention the apparent difference in phonology or syntax). Thus, in the light of the general psycholinguistic principle illustrated in (7 a–c), the consequence of avoiding an L2 structure would be the production of an alternative version that is morphophonologically or morphosyntactically different from that structure, provided that the consequence of this production would, in turn, be the 'paraphrase' itself.

17. In current philosophical thinking, Nagel (1993) offers what he claims is a critical account of 'materialism' and other derivative notions such as Quine's (1972) 'eliminative materialism' (cf. Avicenna's 'noneliminative materialism') on the prior understanding of what is mental and what is material (see also note 20). In his review of John Searle's *The Rediscovery of the Mind* (1992), Nagel outlines what he considers to be Searle's 'radical thesis', which states that 'consciousness is a physical property of the brain'. This property, Nagel continues, is 'irreducible to any *other* physical property', a thesis that 'would be a major addition to the possible answers to the mind-body problem' if it were adequately made clear, which according to Chomsky Nagel regards as doubtful. For Nagel, the proposition that 'consciousness is a higher-level of emergent property of the brain' seems to be the 'metaphysical heart' of Searle's thesis. Chomsky correctly points out that the thesis in its present formulation 'is not radi-

cal' for it was "the natural reaction to Newton's demolition of the mechanical philosophy, hence of the mind-body problem, at least in its Cartesian form" (for an interesting critique of Nagel's review, see Chomsky 1993, pp.190f.). Moreover, this thesis, as it was *indirectly* enunciated by medieval philosophers such as Avicenna, was also a natural reaction to the predominance of 'idealistic' and 'theological' elements over an 'irrationalist' sect of philosophers who played a crucial role in the continual elimination of critical discourse and the gradual emergence of state despotism at the time. Only in the nineteenth century, however, was the thesis *directly* enunciated in the form of what is known as 'dialectical materialism' (see also note 7).

18. It seems that the contrast between 'classical' empiricism (the empiricism of the seventeenth and eighteenth centuries) and rationalism was extremely sharpened by the so-called neo-empiricists (or neo-behaviourists) such as Skinner and Quine, who subscribed to the view that language is fundamentally an adventitious and contingent construct, exclusively taught and learned by stimulus-response associations, reinforcement, conditioning, etc. (see also note 8). This contrast was also sharpened by the so-called neo-positivists (or verificationists) such as Wittgenstein, who held that the teaching and learning of language proceeds through drill and explicit explanation (cf. Chomsky 1965, p.51). Yet, even in the seventeenth and eighteenth centuries the notion of 'freedom' from stimulus control did not, in itself, go beyond the limits of mechanical accounts, and thus the rationalist discussion of these limits referred to an essential property of the normal use of language, its coherence and 'appropriateness to the situation', let alone its 'creativity' (cf. Chomsky 1972, pp.12f; 1993, pp.188f.).

19. In this sense, psychological hedonism is sharply distinguished from ethical hedonism, which asserts that the ultimate goal of humans is pleasure: "only pleasure is intrinsically desirable and only displeasure (or pain) is intrinsically undesirable". A stronger version of ethical hedonism is formulated in the following way: "only pleasant states of mind are desirable in themselves and only unpleasant states of mind are undesirable in themselves: one state of affairs is more desirable in itself than another state of affairs if and only if it contains more (in some sense) pleasant states of mind than the other (the quantity of value in a state of affairs being measured by the quantity of pleasure in it)" (Edwards 1972, Vol. III, p.432).

20. Like epistemic naturalism, which in turn derives from Quine's 'epistemology naturalized" as we have seen, eliminative materialism regards natural science as theories of quarks and neurons, along with specific

psychological processes. On this account, knowledge of language in general would be "linked to our neural input by neural mechanisms of association or conditioning" (quoted in Chomsky 1993, p.196). Valid or not, Quine's seemingly 'backhanded' application of Pavlov's principle of nervism (cf. section 1) to L1 acquisition would not go beyond the 'gradual reification of bodies' in the recognition of the *practical* identity of a particular gnosiological state.

21. Nonindividuation and prioritization of one of two gnosiological states (in the sense intended here) should not be confused with the individuation and nonprioritization of the mind through the dichotomization of the two entities (body and mind) in the Avicennian and the Cartesian versions of dualism discussed in section 1. The relation between the two gnosiological states is an interdependency relation whose internal ramifications are *purely cogitative*, whereas the relation between body and mind is, according to the Avicennian version at least, a dependency relation whose internal ramifications cannot be viewed as purely cogitative, since mental phenomena 'depend' mainly on the evolution of vital organic forces (cf. Hobbes's notion of 'the vital motion of blood').

22. In medieval philosophy in general, the term 'intuitive cognition' was used to indicate the same import of 'sensory intuition' as used in contemporary philosophy (cf. 17a). The former was contrasted with 'abstractive cognition', a term that included perception, memory, and imagination. Further, the use of 'intuition' as a faculty of noninferential knowledge (cf. 16 b–c) was maintained by Descartes, Spinoza, and Locke in much the same way the term 'nonsensory intuition' was used later (cf. 17b). However, the term 'intuition' as a faculty of nonpropositional knowledge has been familiar since Kant who, together with Fichte and the neo-Thomists, spoke of the object intuited as an 'act' rather than a 'thing' or an 'essence'. With some modification of this latter sense, Bergson referred to the inexpressible nature of intuition in the sense of (17c).

23. Some psychologists and philosophers of the present century still believe that such a 'hunch' is ascribed to women and bank managers. This nonsensical assumption, which implies that only men who are not bank managers lack this faculty, is nothing but clear evidence of the investigator's incapability of uncovering the reasons that lead to this type of intuition, since the purpose of investigation here is to uncover the reasons (unlike the case of (16b) where there are no reasons to be uncovered).

24. In generative linguistics, in particular, it is not always easy to make a distinction between 'intuition' and 'judgement', due to the fact that the cognitive factors involved in either faculty are still not fully understood

in current research. The term 'intuition' is sometimes used to refer to *tacit knowledge* (or *Sprachgefuhl*), a cognitive state that is attained as a by-product of a computational system for human language (CHL). It is assumed that CHL entails only two interacting subsystems: an articulatory-perceptual (A-P) and a conceptual-intentional (C-I). CHL, therefore, is said to map an array of lexical choices onto a given linguistic expression (π, λ) where π is a PF representation interpreted at the A-P interface and λ is an LF representation interpreted at the C-I interface (Chomsky 1994, pp.7f.). 'Intuition', so understood, can be portrayed as a reflection of CHL that takes place in the L1 speaker's internalized mental grammar, and below the level of conscious awareness (Chomsky 1993, pp.197f.). 'Judgement' of acceptability, on the other hand, is a 'conscious' act whereby the L1 speaker reports his/her 'intuition' which is already registered by means of introspection. As such, 'judgement' is associated with the domain of E-language, and thus its capacity is affected by a variety of factors, of which I-language is only one.

25. The ineffable in this sense should not be confused with the unknowable in Kant's sense: while the former still belongs to the world of possible experiences where *phenomena* are knowable but inexpressible, the latter would characterize the world of what is called *noumena*, or things-in-themselves (*Dinge-an-sich*), which are not objects of experience but stand proxy for a world that is unknowable. Kant himself asserted that noumena were both unknowable and ineffable, the latter being restricted to the inexpressible only. From a materialist perspective, however, things-in-themselves are in principle identical with the things known to us. The only distinction is between what is known and what is not yet known, or between what is known 'partially' and what is known 'totally'. Nevertheless, the usual construal of the ineffable can be seen in such statements as "I know X somehow, but I cannot put X into words; I cannot say what I know about X" (cf. Edwards 1972, vol. IV, p.181).

26. I do not know whether Ickenroth (1975) had this conditioning in mind when he referred to the notion of 'escape routes', compensational strategies that were adopted by learners who suffered discomfort with a particular linguistic feature. But in any event, Kleinmann seems to have completely missed the point upon equating this notion with the notion of 'paraphrase' (cf. Kleinmann 1977, p.373; see also notes 12 and 16).

27. Out of the 531 Arabic passives (paradigm A), only 28 examples express an overt Agent-PP where the unmarked case is reference to God as an 'Unknown Entity': 25 with the preposition (min) *'from'*, 2 with the preposition (bi) *'with/by'*, and 1 with the preposition (ʔinda) *'at'* . It is interesting to see that up to the fourteenth century *from* was used as the princi-

pal preposition to denote agency in Old English, with the use of other prepositions such as *with, of, at*, etc. as secondary. Only later, however, did the preposition *by* develop diachronically out of the bound morpheme *be-* (cf. Fraser 1987).

References

Baldwin, T. R., 1993: Two types of naturalism. *Proceedings of the British Academy* (Oxford) 80, pp.171–99.

Bechterev, V. M., 1913: *La Psychologie Objective*. Paris: Alcan.

Bergson, H., 1889: *Essai sur les données immédiate de la conscience*. [*Time and Free Will*, trans. F. L. Pogson, London: Allen & Unwin, 1910].

Bergson, H., 1896: *Matière et Mémoire*. [*Matter and Memory*, trans. N. M. Paul and W. S. Palmer, London: Allen & Unwin, 1911].

Bergson, H., 1907: *L'Evolution Créatrice*. [*Creative Evolution*, trans. A. Mitchell, London: Macmillan, 1911].

Bergson, H., 1919: *L'Energie Spirituelle*. [*Mind-Energy*, transl. W. H. Carr, London: Macmillan, 1920]

Bergson, H., 1934: *La Pensée et le Mouvant*. [*The Creative Mind*, trans. M. L. Andison, New York: Philosophical Library, 1946].

Bergson, H., 1935 [1972]: *Mélanges*. Edited by A. Robinet. Paris: Presses Universitaires de France, 1972.

Bromberger, S., 1992: *On What We Know We Don't Know*. Chicago: University of Chicago Press.

Chomsky N., 1959: Review of Skinner (1957). *Language* 35, pp.26–58.

Chomsky, N., 1965: *Aspects of the Theory of Syntax*. Cambridge, Mass.: MIT Press.

Chomsky, N., 1972: *Language and Mind*. New York: Harcourt Brace Jovanovich.

Chomsky, N., 1986: *Knowledge of Language: Its nature, Origin and Use*. New York: Praeger.

Chomsky, N., 1988: Some notes on economy of derivation and representation. Ms. MIT. Reprinted in Freiden, R. (ed.), 1991: *Principles and Parameters in Comparative Grammar*. Cambridge, Mass.: MIT Press.

Chomsky, N., 1992: A minimalist program for linguistic theory. Ms. MIT. Reprinted in Hale, K. and Keyser, S.J. (eds.), 1993: *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*. Cambridge, Mass.: MIT Press.

Chomsky, N., 1993: Naturalism and dualism in the study of language and mind. *International Journal of Philosphical Studies* 2.2, pp.181–209.

Chomsky, N., 1994: Bare phrase structure. Ms. MIT.

Chomsky, N., 1995: Categories and transformations. Ms. MIT.

Domjan, M. and B. Burkhard, 1993: *The Principles of Learning and Behaviour*.

California: Brooks/Cole.
Edwards, P. (ed.), 1972: *The Encyclopedia of Philosophy*. Eight Volumes. New York: Macmillan.
El-Marzouk, G., 1995a: Avoidance or some other strategy: A case for the passive in Arabic and English. *Teanga: Irish Association for Applied linguistics* 15, pp.113–25.
El-Marzouk, G., 1995b: Syntactic 'perfection' and lexical 'imperfection' in L1–L2 acquisition. Paper delivered at EUROSLA 5 Conference, University College Dublin, September 1995.
Forlani, A., 1927: Avicenna: Il cogito, ergo sum de cartesio. *Islamica* (Leipzig) 3.1, pp.53–72.
Fraser, T., 1987: The establishment of 'by' to denote agency in English passive constructions. In A. Ramat, O. Carruba and G. Bernini (eds.), *Papers from the 7th International Conference on Historical Linguistics*. Amsterdam: Benjamins, pp.239–49.
Grant, L. and A. Evans, 1994: *Principles of Behaviour Analysis*. New York: Harper Collins.
Ickenroth, J., 1975: On the Elusiveness of Interlanguage. Progress Report, Utrecht, December.
James, C., 1980: *Contrastive Analysis*. London: Longman.
Jordan, Z. A., 1967: *The Evolution of Dialectical Materialism*. London: Macmillan.
Kamimoto, T., A. Shimura and E. Kellerman, 1992: A second language classic reconsidered: The case of Schachter's avoidance. *Second Language Research* 8.3, pp.251–277.
Kleinmann, H., 1977: Avoidance behaviour in adult second language acquisition. *Language Learning* 27, pp.93–107. Reprinted in Robinett and Schachter (eds.), 1983, pp.363–77.
Kleinmann, H., 1978: The strategy of avoidance in second language acquisition. In W. Ritchie (ed.), *Second Language Acquisition Research: Issues and Implications*. New York: Academic Press, pp.157–74.
Lacey, A. R., 1989: *Bergson*. London: Routledge.
Marwa, H., 1980: *al-naz'aat al-maadiyya fi al-falsafa al-arabiyya al-islaamiyya*. [*Materialistic Tendencies in Arabic-Islamic Philosophy*]. Two Volumes. Beirut: Dar Al-Farabi.
Nagel, T., 1993: The mind wins. New York Review of Books (March 4), a review of John Searle's *The Rediscovery of the Mind*. Cambridge, Mass.: MIT Press.
Newmark, L. and D. Reibel, 1968: Necessity and sufficiency in language learning. *IRAL* 6.2, pp.145–64.
Pilkington, A. E., 1976: *Bergson and His Influence: A Reassessment*. Cambridge: Cambridge Universty Press.
Pinkal, M., 1985: Kontextabhängigkeit, Vagheit, Mehrdeutgkeit. In C. Schwarze and D. Wunderlich (eds), *Handbuch der Lexikologie*. Königstein: Athenäum.

Quasthoff, U. M., 1994: Context. In *The Encyclopedia of Language and Linguistics*. Vol. II. Pergamon Press.
Quine, W. V., 1960: *Word and Object*. Cambridge, Mass.: MIT Press.
Quine, W. V., 1969: Epistemology naturalized. In his *Ontological Relativity and Other Essays*.
Quine, W. V., 1992: Structure and nature. *Journal of Philosophy* LXXXIX, 1, pp.5–9.
Richelle, M. N., 1993: *B. F. Skinner: A Reappraisal*. Hove: Lawrence Erlbaum.
Robinett, B. W. and J. Schachter (eds), 1983: *Second Language Learning: Contrastive Analysis, Error analysis, and Related Aspects*. Ann Arbor: University of Michigan Press.
Schachter, J., 1974: An error in error analysis. *Language Learning* 24, pp.205–14. Reprinted in Robinett and Schachter (eds.), 1983, pp.354–62.
Seliger, H., 1989: Semantic transfer constraints on the production of the English passive by Hebrew-English bilinguals. In H. Dechert and M. Raupach (eds), *Transfer in Language Production*. Norwood, NJ: Ablex, pp.21–33.
Skinner, B.F., 1957: *Verbal Behaviour*. New York: Appleton-Century-Crofts.
Tarone, E., U. Frauenfelder and L. Selinker, 1976: Systematicity/variability and stability/instability in interlanguage systems: More data from Toronto French immersion. *Language Learning* 4, pp.93–134 (Special Issue).
Uraibi, M.Y., 1991: *al-istishraaq wa taghreeb al-aql al-taareekhi al-arabi* [*Orientalism and the Ahistoricization of the Arabic Philosophy of Mind*]. Morocco: National Council for Arabic Culture.
Wittgenstein, L., 1953: *Philosophical Investigations*. New York: Oxford Univesity Press.
Woolhouse R. S., 1988: *The Empiricists*. Oxford: Oxford University Press.
Zhao, R., 1989: A discourse analysis of relative clauses in Chinese and English: An error in 'An error in error analysis'. *IDEAL* 4, pp.105–17.

© 1998
Goliath El-Marzouk

Autumn 1990

25. Paul Farrell, *Vocabulary in ESP: a lexical analysis of the English of electronics and a study of semi-technical vocabulary* (82pp.)

26. David Singleton, *The TCD Modern Languages Research Project: objectives, instruments and preliminary results* (19pp.)

27. Federica Scarpa, *Contrastive analysis and second language learners' errors: an analysis of C-test data elicited from beginners in Italian* (47pp.)

Spring 1991

28. Jennifer Ridley, *Strategic competence in second language performance: a study of four advanced learners* (95pp.)

29. Susan Abbey, *A case for on-going evaluation in English language teaching projects* (43pp.)

Spring 1992

30. Frank Donoghue, *Teachers' guides: a review of their function* (51pp.)

31. Barbara Byrne, *Relevance Theory and the language of advertising* (76pp.)

Summer 1992

32. Jonathan West, *The development of a functional-notional syllabus for university German courses* (50pp.)

33. James Mannes Bourke, *The case for problem solving in second language learning* (23pp.)

Autumn 1992

34. Tom Hopkins, *Intertextuality: a discussion, with particular reference to* The Waste Land (28pp.)

35. David Singleton & Emer Singleton, *University-level learners of Spanish in Ireland: a profile based on data from the TCD Modern Languages Research Project* (12pp.)

Spring 1993

36. Frank Maguire, *Sign languages: an introduction to their social context and their structure* (39pp.)

37. Ema Ushioda, *Acculturation theory and linguistic fossilization: a comparative case study* (54pp.)

Summer 1994

38. Carl James, Phil Scholfield & George Ypsiladis, *Cross-cultural correspondence: letters of application* (28pp.)

39. Dieter Wolff, *New approaches to language teaching: an overview* (18pp.)

Spring 1995

40. James A. Coleman, *Progress, proficiency and motivation among British university language learners* (38pp.)

Summer 1995

41. Terence Odlin, *Causation in language contact: a devilish problem* (40pp.)

42. Dee McGarry, *An integrated ESL and cultural studies syllabus* (43pp.)

Spring 1996

43. Terence Odlin, *"Sorrow penny yee payed for my drink": taboo, euphemism and a phantom substrate* (24pp.)

44. Michael Sharwood Smith, *The Garden of Eden and beyond: on second language processing* (20pp.)

45. Diana Massy, *Examining assumptions in second language research* (24pp.)

Summer 1996

46. David Little & Helmut Brammerts (eds), *A guide to language learning in tandem via the Internet* (24pp.)

Spring 1997

47. Barbara Lazenby Simpson, *Social distance as a factor in the achievement of pragmatic competence* (60pp.)

48. Danièle Tort-Moloney, *Teacher autonomy: a Vygotskian theoretical framework* (54pp.)

49. Terence Odlin, *Hiberno-English: pidgin, creole, or neither?* (39pp.)

Autumn 1997

50. Robert J. Fouser, *Pragmatic transfer in highly advanced learners: some preliminary findings* (44pp.)

51. Hans W. Dechert, *What's in a life?* (19pp.)

Spring 1998

52. Ghiath El-Marzouk, *Avoidance defined: the psychology of linguistic determinism and the ontology of cognitive predeterminism* (74pp.)

53. David Singleton, *Lexical processing and the "language module"* (38pp.)